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Worldwide Report

ENVIRONMENTAL QUALITY

No. 400



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TASMANIAN GOVERNMENT APPROVES MINING IN WILDERNESS AREAS

Canberra THE WEEKEND AUSTRALIAN in English 26-27 Mar 83 p 3

[Article by Robert Engisch]

[Text]

THE Tasmanian Government decided yesterday to allow mining in the south-west wilderness area.

It brought a sharp reaction from the director of the Tasmanian Wilderness Society, Dr Bob Brown, who predicted that small speculative mining companies would scar the wilderness area.

And the Tasmanian Opposition has called for the urgent completion of a management plan so that any exploration is undertaken within strict guidelines.

The reaction follows the announcement by the Tasmanian Minister for Mines, Mr Groom, that a moratorium on mining exploration and development in the south-west, imposed in 1978, would be lifted.

Mr Groom said the three national parks in the area would not be affected in any way and any exploration and

development in conservation areas would be strictly supervised.

Dr Brown yesterday rejected claims by the Premier, Mr Gray, that natural resources in the south-west were worth between \$2500 million and \$4000 million.

He said it was not true the south-west was some sort of mineral El Dorado. It had been worked over as long ago as the 1850s.

Dr Brown said it would be impossible for the Tasmanian National Parks and Wildlife Service to police the area. It had only 47 rangers throughout Tasmania — compared with 60 rangers in the Kakadu National Park. Not one was engaged in the south-west Wild Rivers National Park.

He said scarring was still left from speculative mining in the 1970s.

CSO: 5000/7571

SOIL CONSERVATION PROGRAMS PROVE BENEFICIAL, COST-EFFECTIVE

Melbourne THE AGE in English 25 Mar 83 p 13

[Article by Sally White]

[Text] **T**HE sunburnt country, a land of droughts and flooding rains. In the space of days, Australians have had it forced home just how true that description is.

The drought is disastrous. But, for our soils, not as bad as it might have been. Since the last severe dry in 1944 there has been some progress towards softening the effects of drought years.

The rabbit scourge has been checked. The use of tractors and other heavy equipment means that emergency works to stem erosion and silting can be carried out quite rapidly.

More farmers are using preventive techniques like minimum cultivation, retention of crop stubble, strip-cropping and the use of new implements like blade ploughs and rod weeders which minimise soil disturbance.

The Victorian Soil Conservation Authority chairman, Mr Alex McConnell, says that by far the most important and least visible part of conservation strategy is positive and preventive, the application of appropriate land management techniques.

While works which are aimed at mitigating the effects of past bad practices and reclaiming and restoring eroded land can be expensive, prevention is less costly.

So gradually and with moderate outlays, soil conservation authorities have been working on projects which demonstrate the cost benefits of an integrated approach to the husbanding of soil and water resources.

The Eppalock catchment programme which began in 1960 and ended in 1975 is a Victorian example. It was the first time that work on a water supply project — enlargement of the Eppalock Reservoir near Heathcote — and a soil conservation programme — control of severe erosion throughout the Campaspe River catchment — had been planned in tandem.

The benefits were diverse and rapid. Adoption of chisel seeding improved infiltration of water and reduced run-off and consequent silting of the reservoir. On many properties, wool production trebled and pasture improvement enabled diversification from wool-growing into fat lamb and cattle raising.

Over the 15 years, the outlay at current prices was about \$3.2 million. Landowners paid about \$770,000 for productive improvements like the chisel seeding, fertiliser top-dressing and subdivision fencing. The SCA outlaid about \$2.43 million on works designed specifically to protect the reservoir from silting.

Unfortunately, the benefits of the Eppalock project would not necessarily be achieved nationally. The diversity of soils and climate mean that Australian farmers and conservationists cannot make assumptions about land use practices.

The quest for an Australian soil-loss formula which can predict erosion effects and pinpoint remedies is under way in various university and CSIRO laboratories and field stations throughout the country.

But the research effort, like the extension of preventive measures in the field, is largely dependent

on the availability of money and trained people.

It is political will that turns on the financial tap. Ironically, the drought may prove the catalyst for the adoption and implementation of the co-ordination national soil conservation programme for which conservationists have been pleading for years.

Last month, the States' Agriculture Ministers unanimously called for a Federal programme. One of the first pronouncements from the new Federal Minister for Primary Industry, Mr Kerin, promised increased spending and a national soil conservation policy. Across the political spectrum soil is now acknowledged as a national resource.

While soil conservationists still await the reality of a national programme, those involved with the water resources side of the land-water equation can point to the tangible benefits of a co-ordinated Federal approach.

The National Water Resources Programme which guaranteed a dollar-for-dollar subsidy to the States for priority water projects was introduced in 1977.

State works which have attracted the grant include filtration projects for South Australia to improve water quality in Adelaide and the "iron triangle" towns, flood mitigation works on the Torrens River, salinity controls like the Mildura-Merbein groundwater interception scheme and complementary projects across the Murray in New South Wales.

The fate of the programme and, more specifically, the \$350 million bicentennial boost to water

resources funds announced by Mr Fraser last Australia Day is unknown.

The Labor Party has indicated that its funding priorities will be based on the recommendations of a study, *Perspectives on Water Resources to the Year 2000*, due to go to the Government soon.

However, there is no doubt that the River Murray will continue to be a focus of effort. It is on the Murray that the three elements necessary to save our soil and make the best use of our water resources — research, application of appropriate land use techniques and construction of remedial works, creation of public awareness and political will — are beginning to come together.

The Murray-Darling catchments cover one-seventh of Australia's land area. About 10,000 irrigation farms in Victoria alone are dependent on the river. Eighty-five per cent of South Australia's water comes from it.

And the Murray is a problem, heavy with salt seeping from both dry land and irrigated areas and soil sluiced from its catchment lands.

But the Water Commission's director of rural water supplies, Arthur Clegg, believes that despite the drought the quality of Murray water is very good, compared to the year of the last drought in 1967.

For instance, because of the dry there is no salt at all flowing into the Murray from Barr Creek, a tributary of the Loddon and the greatest single contributor to the Murray's salt load. It is all being trapped in the Lake Tutchewop evaporation pans. Even in wetter years the Tutchewop scheme, can cut Barr Creek's salt load by 23 per cent.

A major advance has been the strengthening of the role of the River Murray Commission. Originally

set up to allocate the river's resources, the commission's powers have been extended to include monitoring and setting water quality standards.

However, the fact remains that the twin problems of salt and soil in the Murray originate in areas of State constitutional authority, back on the land. The nexus between land and water is inescapable. And, on the land, there is increasing deterioration.

The last word belongs to Alex Mitchell. "Soil is something people, city people, find it very difficult to get emotional about where they can get emotional about some animal or plant which might be under threat."

"We talk about planet Earth but we must also remember it's only the top, a very thin layer and a very small part of that layer, on which we are all dependent."

In Australia, that very thin layer is getting thinner.

URANIUM MINING AREA TO BE RESTORED TO WILDERNESS STATE

Sydney THE SYDNEY MORNING HERALD in English 28 Mar 83 p 11

[Article by J. N. Pierce]

[Excerpt]

Inquisitive tourists heading along the Barclay Highway in north Queensland now face a long walk if they want to see one of the State's most famous mines.

Mary Kathleen Uranium, which mined its last tonne of uranium ore in September and produced its last kilogram of yellowcake a month later, has warned in its annual report that "large boulders have been placed on roads leading to the open cut mine to discourage future public access."

The blocking of the mine haul and access roads is part of a program for which nearly \$18 million has been provided to turn the area as far as possible back to the wilderness it was 29 years ago, before a Mount Isa taxidriver, Clem Walton, and his prospecting syndicate struck it lucky with their geiger counters.

The scar of the open pit will remain, but rehabilitation plans approved by the Queensland Government will make sure that there will be no repetition of Rum Jungle's bad housekeeping.

The aim of the program is that "the area should be left in a condition which would not be open to criticism in terms of public safety and appearance."

MKU says in its annual report that the waste dumps have been stabilised and revegetated, the evaporation ponds are being dredged and dried out and the precipitate and contaminated soil is being collected and put in the tailings dams.

The covering and contouring of these dams is underway to ensure that radiation, erosion and leaching are safely contained. This work should be finished next year, depending on the time taken to dry out the evaporation ponds.

Mary Kathleen township, one of the first bold experiments in planning remote mining communities, will disappear.

All of its 220 houses and other buildings are expected to be sold either by public tender or at a monster six-day auction sale starting on April 11 during which equipment ("cleaned and decontaminated"), stores and other items will come under the hammer.

Just as the setting up of Mary Kathleen laid down a pattern for the establishment of mining towns in the development wave of the 1960s, its dismantling will be a closely and critically watched example for other uranium operations.

NATIONAL PARKS MINISTER ANNOUNCES PLANS FOR MORETON ISLAND

Brisbane THE COURIER-MAIL in English 26 Mar 83 p 4

[Article by Marion Smith]

[Text] **A MAJOR new program of special projects for Moreton Island was announced yesterday by the National Parks Minister, Mr Elliott.**

The program includes the building of a \$250,000 National Parks headquarters; a series of campsites with bush lavatories and showers dotted around the island; a permanent staff of five National Parks and Wildlife officers; signposting of the island and several ecological research projects.

Mr Elliott announced the details of the \$395,000 program during an inspection of the island yesterday with National Parks personnel and the Welfare Services Minister, Mr Terry White, whose electorate includes the island.

But Mr Elliott warned the Federal Government that any delays in granting export permits to sand-mining companies could delay the declaration of extended areas of national park. Some 58 percent of the island already is declared national park.

The proposed campsites for the island, to be built soon, include sites at The Wrecks, Middle Road, Koorringal, Eager's Creek and Blue Lagoon.

Mr Elliott said work would be completed first on the ocean beach sites.

The Moreton Island Protection Committee project officer, Ms Cathy Wright, said: "We're very happy with the National Parks program to provide facilities particularly for Easter when there will be large numbers of visitors to the island."

"But two of the sites for proposed campsites are Blue Lagoon and Eager's Creek, both of which are covered by mining leases."

Ms Wright said construction of camping facilities at these sites was recognition of their importance as recreational areas.

"With that recognition by the National Parks and Wildlife Service, the government should reject lease applications now before the mining courts and recall existing leases," she said.

Mr Elliott said an extensive clean-up campaign to clear litter along the beaches and roads of Moreton was in underway.

A campaign to eradicate the feral pig population had been in operation since January and had reduced the numbers from 150 to only seven or eight, he added.

The National Parks headquarters will be built near Middle Road, north of Tangalooma, and should be ready by October. The Works Department design would be a model for future buildings in national parks.

NSW JUDGE RAPS ENVIRONMENTAL HEAD FOR 'INCORRECT' ADVICE

Use of Studies by Developers

Sydney THE SYDNEY MORNING HERALD in English 1 Apr 83 p 3

[Article by Joseph Glascott]

[Text] The Chief Judge of the Land and Environment Court, Justice McClelland, has strongly criticised the director of the Environment and Planning Department, Mr R. B. Smyth, for allowing councils to accept environmental studies prepared by consultants for developers.

"In a judgment yesterday, he accused Mr Smyth of not taking very seriously an aim of the Environmental Planning and Assessment Act "or grievously misunderstanding it."

"The judge said he found it extraordinary that Mr Smyth, who was represented by counsel, "did not see fit to put any submissions in defence of his conduct in giving a manifestly incorrect interpretation of important sections of the Environmental Planning and Assessment Act to councils and their officers."

"He said the incorrect advice had presumably contributed to serious errors of conduct by the council involved in the case.

"He said he intended to forward a copy of the judgment to the Minister for Planning and Environment, Mr Bedford, with a suggestion that the director be instructed to withdraw a circular which contained a "dangerously incorrect interpretation" of a section of the Act.

The case involved an action against Wollongong City Council's approval of rezoning for a shopping centre by New World Properties Pty Ltd on Balls Paddock fronting the Princes Highway, at Woonona.

"One of the applicants was Burns Philp Trustee Co Ltd, which as a

lease owns a shopping centre partly at Corrimal.

"The proposed Woonona shopping centre also was opposed, but not in court, by the Balls Paddock Action Committee, a group of local residents and retailers who said the development would mean loss of open space used for sport and would increase traffic in the area.

The judge found the council and the department's reasoning of the land was null and void.

Justice McClelland said that in October, 1981, the council informed the department that it proposed to prepare a local environmental plan for the shopping centre site.

The judge said it was apparent on the council's resolution and a letter from the council to the company that the council believed the company was responsible preparing an environmental study.

In June, 1982, the council, replying to an inquiry, said "an environmental study is currently being prepared by a firm commissioned by the applicant company."

Justice McClelland said that, not surprisingly, the environmental study commissioned was not long in arriving.

In July, 1982, the council's officers drafted a local environmental plan which in fact was an adaptation of the plan prepared by the developer's consultants.

In spite of local residents' objections, the council adopted the draft of the environmental plan which was eventually approved by the Minister, Mr Bedford.

Justice McClelland said the cornerstone of the court appeal was the argument that the Act required

a council, unless the director otherwise approved, to "appoint or employ a person to assist it in the preparation of, or to prepare on its behalf an environmental study."

He said the insistence that the study be prepared by or on behalf of the council was of fundamental importance to the Act.

"I have read many consultants' reports commissioned by developers, prepared for developers and paid for by developers, none of which argued against the proposed development or even cast a doubt on its being deserving of consent," he said.

He said he was in no doubt that the study for the Woonona project was not on behalf of the council, but of the developer.

The judge quoted Mr Smyth's circular to councils which said in part "if the environmental study is required, then council has to decide whether or not the council requires the applicant to carry out the environmental study on the council's behalf at the applicant's expense."

The circular also said "the council may either undertake the study or require the applicant to have it prepared in accordance with specifications."

The judge commented: "A consultant who was responsible to and reporting only to the council is much more likely objectively to approach the question than a consultant who is dependent upon the developer."

One of the objects of the Act was to provide for increased public involvement and participation in environmental planning and assessment.

"I can only conclude in the light of the advice contained in the circular, that the director does not take very seriously that professed object of the Act or grievously misunderstands it."

Mr Smyth said yesterday the circular criticised by the judge was prepared by senior officers of his department and was vetted by the department's legal officers.

It followed the past procedures of the department and was based on what was thought to be a reasonable interpretation of the Act.

Judge's Record of Criticism

Sydney THE SYDNEY MORNING HERALD in English 1 Apr 83 p 3

[Article by Joseph Glascott]

[Text] Justice McClelland has become the "angry judge" of the NSW Bench.

As Chief Judge of the Land and Environment Court, he has become an outspoken critic of the State Government's efforts to circumvent its own planning laws.

Justice McClelland was known as "Diamond Jim" in his earlier days at the NSW Bar.

He was a senior colleague of the Premier, Mr Wran, and other NSW Labor lawyers.

As a Federal Senator he was Minister for Manufacturing Industry and Labour and Immigration in the Whitlam Government.

He was appointed a judge of the NSW Industrial Commission in 1978 and then Chief Judge of the new Land and Environment Court in 1980.

Justice McClelland's criticism of Mr Smyth yesterday is not his first comment on the planning laws.

In February he took the unusual step of publicly criticising the State Government on its planning and environmental procedures.

He criticised the Government for introducing legislation to permit a stadium on Cumberland Oval in Parramatta Park in spite of the Land and Environment Court's over-ruling of a council decision approving the development.

In a speech to the Urban Development Institute he said: "There is no doubt of the right of a State legislature to pass a law which will have the effect of allowing those who wish to build a stadium to escape the obligations of the Government's own environmental laws."

But, he asked, what was the worth of an independent judiciary when a government introduced a law to get round its own previous laws.

In an interview with The Age, Melbourne, he said the Wran Government's attempt to circum-

vent its own legislation posed a great threat to the independence of the judiciary.

"Having fathered the legislation they are, in some ways, trying to disown the child," he said.

The judge was voicing the disquiet of many planners and environmentalists about the Wran Government's revision of its commitment to public participation in planning.

The most overt act of the Government was in introducing special legislation last year to exempt a \$275 million shopping, factory and residential development at Pagewood from the normal processes of the Planning Act.

The Government has indicated that developments which create employment and bring investment to the State are the highest priority even if this involves treading on its own planning and environmental laws.

Justice McClelland, however, is a voice pricking the Government's conscience.

CSO: 5000/7572

HAWKE TAKES FIRST LEGAL STEP TO HALT FRANKLIN RIVER DAM

Tasmanian Voter Support for Dam

Canberra THE AUSTRALIAN in English 28 Mar 83 p 1

[Article by Peter Dwyer]

[Excerpt]

LOCAL Government elections in Tasmania at the weekend reaffirmed local support for the Franklin Dam.

Voters in the west coast town of Strahan removed three anti-dam councillors in the annual elections and replaced them with pro-dam candidates.

The Prime Minister, Mr Hawke, last night reaffirmed his election undertaking to halt construction on the dam, but a spokesman said Mr Hawke had no comment on the Strahan election.

Before the election, the Strahan council, led by anti-dam warden Mr Harry McDermott,

who lost his seat, was the council most vocal against the dam.

Despite the dam issue, the defeat of Mr McDermott in Strahan was a shock. He had been warden for nearly 20 years and a councillor for 27 years.

He said yesterday the votes of residents from nearby pro-dam Queenstown had led to the defeat.

The elections give the Tasmanian Premier, Mr Gray, further grounds to justify his refusal to discuss with Mr Hawke any proposals to stop the development.

High Court Role

Canberra THE AUSTRALIAN in English 30 Mar 83 p 3

[Excerpt]

THE Prime Minister, Mr Hawke, last night foreshadowed legal action against the Tasmanian Government to prevent construction of the Franklin dam.

In a brief statement, Mr Hawke said it seemed it would be necessary for the Federal Government to "follow the legal avenues open to it".

He said: "It appears that Mr Gray has closed off all options for an immediate negotiative settlement on this issue."

The High Court action is expected to occur soon.

Mr Hawke's statement came only hours after the Tasmanian Premier, Mr Gray, declared that only an order by the High Court would make Tasmania stop work on the dam.

New Federal Regulations

Canberra THE AUSTRALIAN in English 31 Mar 83 p 1

[Article by Marsali Mackinnon]

[Excerpts]

THE Federal Government, moving to overrule Tasmania's State powers, last night imposed new laws which would fine anyone involved in construction of the Franklin Dam up to \$5000.

The regulations — certain to result in a High Court battle, possibly by later today — were approved after a Cabinet meeting yesterday and given Executive Council agreement last night.

The regulations rely heavily on the federal external affairs power of the Constitution and are based on the former federal government's nomination of south-west Tasmania to the World Heritage Commission.

Government sources in Tasmania last night said work would probably continue on the dam today.

The Premier, Mr Gray, said he was convinced the Federal Government did not have the constitutional power to stop the work.

However, he said he would abide by any High Court decision which settled the matter.

The Governor-General, Sir Ninian Stephen, signed the new regulations last night. They provide:

A Commonwealth takeover of a specific area covering the Franklin River.

Imposition of fines, as from today, of \$5000 for anyone who is involved in or orders his employees to "construct a dam or associated work".

An embargo on the building of any roads in the region without federal consent.

The order approving the new regulations cited the United Nations' World Heritage Commission convention and said the area involved was part of the "cultural and natural" heritage of Australia.

Announcing the move, Mr Hawke said the Government would add to the "weapons in its armory" by introducing legislation in the May session of Parliament to give it control over Tasmania's south-west wilderness.

He said that since attaining office the Government had "bent over backwards" to resolve the battle over the dam's future "through discussion and negotiation".

Federal offers to meet and discuss the issue with the Tasmanian Government, and two letters from him to Mr Gray proposing replacement work programs for those employed at present in building the dam, had been rejected, he said.

Mr Hawke admitted the regulations could be subject to a High Court challenge. "If they (the Tasmanian Government) have any doubt about the law, then they have their avenues of testing it," he said.

"Once the regulations are gazetted, tomorrow, following the decision of today, then that will represent the law of the land. I am assuming, the Government is assuming, the law of the land will be obeyed."

CSO: 5000/7572

PESTICIDE MISUSE CALLED HEALTH RISK TO FAMILIES, WORKERS

Canberra THE AUSTRALIAN in English 29 Mar 83 p 7

[Article by Fia Cumming]

[Text] PESTICIDES sprayed in houses to control termites and other pests have been found in mothers' breast milk and could be poisoning families, tradesmen and building inspectors.

The Minister for Science and Technology, Mr Jones, yesterday received evidence which shows that chemicals are being sprayed in homes without any safety checks and often by untrained pest operators.

Mr Jones said he would consider taking action when he had studied the situation.

The chemicals involved are closely related to DDT and have been banned from use on food crops.

The Australian Consumers Association (ACA) described the situation as "enormously dangerous" for consumers and unskilled pest contractors who were unaware of the toxicity of the chemicals.

The ACA has documented one case of a Perth woman whose breast milk last year contained 10 times the acceptable level of pesticide after her house had been sprayed.

But the public affairs manager of the ACA, Mr Alan Asher, said yesterday there was no reason to believe this was an isolated case and there was no doubt that excessive

levels of pesticides were being used around Australia in domestic pest control.

A study by the Victorian Department of Conservation last year found traces of highly persistent pesticides used against termites in ground water near Melbourne.

As these chemicals - dieldrin, aldrin and the related chemical, DDT - are banned from agricultural use, they could only have come from household uses.

Another study reported in the Australian Medical Journal in 1973 found pesticide residues up to 37 times the acceptable level in breast milk from 40 mothers in the Brisbane area.

A Melbourne pest controller, Mr Harry Collins, claimed he knew of many cases of electricians, carpenters, plumbers and other building tradesmen suffering the symptoms of chemical poisoning after working on new houses sprayed against termites.

Mr Collins, who has worked as a safety training officer for one of the State's biggest pest control firms, said yesterday no checks were made after spraying to ensure that chemicals had not penetrated the house.

The standards applied to pest control were inadequate and inappropriate and failed to consider important factors such as the soil type beneath

the house, which affected whether the chemical was absorbed or remained under the house. Mr Collins said.

Because of the high cost quoted by many pest control firms, people were doing the spraying themselves and were exposed to risks.

Mr Asher said there was no way of knowing how many people were suffering the effects of chemical poisoning because the health system was not equipped to collect this sort of information.

It was easily demonstrated that excessive amounts of chemicals were being used by pest controllers.

In NSW, pest controllers did not have to be registered, although most other States had a registration system.

The NSW Department of Consumer Affairs held a hearing on the pest control industry four years ago which strongly criticised the lack of regulation and price control.

"The Government is abundantly aware of the problem but there is a lot of buck-passing between departments. No one will take positive action," Mr Asher said.

Mr Collins said he had made unsuccessful approaches to the Victorian Minister for Consumer Affairs, the Victorian Health Commission and the Standards Association to have regulation of pest operators tightened.

WEST AUSTRALIA OK OF COMPANY'S TOXIC WASTE DUMP CRITICIZED

Perth THE WEST AUSTRALIAN in English 1 Apr 83 p 88

[Text]

THE WA Government's acceptance of a chemical company's plans to dump toxic waste underground without first obtaining an environmental report was ridiculous, the Mayor of Cockburn, Mr Don Miguel, said yesterday.

The Minister for Water Resources, Mr Tonkin, recently said he was satisfied that the company's plan was environmentally safe and that there was no need for an Environmental Protection Authority study.

Chemical Industries (Kwinana) Pty Ltd intends to drill a deep bore into the bottom of a salt-water aquifer to dispose of the chemicals 24D and 24ST.

Mr Tonkin said on Tuesday that the waste to be injected was of a very high density and would not move much once it settled on the base of the aquifer—a body of underground water.

The bore carrying the chemical waste would be 200mm wide and lined with stainless-steel piping.

Too easy

Mr Miguel said yesterday that it was too easy to agree with the proposal and to hope that things would be all right.

The CIK plant did not lie within Cockburn's municipality, but the

council believed that the disposal of its effluent underground could adversely affect ground water which could be used by Cockburn residents.

"If a company such as CIK can produce this type of chemical it is reasonable to insist that it finds a method to neutralise it before burying it underground as toxic waste," he said.

"Who can guarantee that the waste will not move in the aquifer and cause problems in 20 years' time?"

Mr Miguel said that the proposal should be reviewed by the Environmental Protection Authority.

This call was supported by the Kwinana Town Council.

The town clerk, Mr Les Baker, said that the council relied on the State Government in such matters to examine the implications of such a proposal before approving it.

The national manager of CIK, Mr John Telford, said he could not comment on whether the toxic wastes could be neutralised.

PROGRESS REPORTED IN FIGHT TO CURB ALGAE IN PEEL INLET, HARVEY ESTUARY

Perth THE WEST AUSTRALIAN in English 30 Mar 83 p 8

[Text]

A REPORT to the WA Government has predicted a steady lessening of algae problems in Peel Inlet and Harvey Estuary.

It expresses confidence that a scheme to reduce phosphorous run-off from farm fertilisers will succeed.

The report by a coordinating committee charged with cleaning up the estuary was presented to the Cabinet last week.

It emanates from phase two of a major study of the algae situation begun by the Department of Conservation and Environment six years ago.

Phase one, completed in 1980, identified the major cause of the problem as excessive nutrients — primarily phosphorus — being washed from the sandy soils of the Harvey River catchment.

Phase two aims at finding the most cost-effective solution. According to the committee, the fertiliser scheme offers the best prospects for an early reduction in algal growth.

Phosphorous

The committee expects the use of a new slow-release fertiliser and reduced application rates to cause a marked reduction in phosphorus.

The Minister for the Environment, Mr Davies, said yesterday that he would be kept fully informed of progress in the programme to clean up the estuary.

In the meantime, the Peel Inlet Management Authority would continue to use two tractors to remove algae from shores and an aquatic weed harvester would continue to collect weed before it reached the shoreline.

Mr Davies said that the harvested algae was being used for soil stabilisation and research was continuing into its suitability for stock feed.

The coordinating committee said that weed harvesting would lessen the algae nuisance, but it was not expected to have a lasting effect on algae abundance.

However, it was also essential to undertake investigative work now on possible engineering measures in case they should prove necessary.

ANTIPOLLUTION MEASURES URGED FOR RAJANG RIVER

Kuala Lumpur THE NATIONAL ECHO in English 27 Apr 83 p 3

[Text]

SIBU, Tues. — The Environment Protection Society of Malaysia (EPSM) yesterday called for concerted efforts to check pollution and silting of the Rajang River, a vital waterway in Sarawak's central region.

EPSM President Mr Gurmit Singh said the river was being polluted by the indiscriminate dumping of timber waste and rubbish.

Speaking to reporters at the end of his 12-day fact-finding tour of the state, Mr Gurmit said toilets perched on cliffs overlooking the river were also contributing to the river pollution.

Exposed soil on slopes reaching out to the river were slipping into it particularly after a heavy downpour.

This silting problem was aggravated by fast river boats which ply the river up to Kapit.

Mr Gurmit, who also visited Kapit, the administrative headquarters of the Seventh Division in the course of

his tour of the state, said the boats' powerful outboard motors were causing waves to wash off the river banks.

Sawmills sited along the river were also dumping saw-dust into the river, he said.

On danger to marine life in Bintulu, Mr Gurmit said the Bintulu Development Authority (BDA) officials had informed him that there was no such danger as yet.

DANGERS

Mr Gurmit stressed that pollution problems should not be always associated with Peninsular Malaysia as the dangers were also present in East Malaysia.

He was confident that with an awareness of the dangers connected with pollution among the people, particularly planners and industrial establishments, it could be prevented.

CSO: 5000/4331

BRIEFS

COASTAL EROSION PROBLEM--In 1979 around election time there was an energetic burst of activity to do something about the massive erosion of the coastline at Newtown Barracks. Belama was awarded a contract and a concrete retaining wall began to take shape. But after victory at the polls for the ruling PUP, the work slackened and eventually came to a standstill. Now that there is talk about new City Council elections, maybe there'll be another burst of energy. Some action is sorely needed. The sea has made substantial inroads into the coastline. When asked to do something about it this week, City Mayor Alvan Fuller told the REPORTER the coastline is not the responsibility of the City Council, but of the Ministry of Works. But Minister of Works Fred Hunter told the REPORTER it was not his Ministry's responsibility either; maybe the Ministry of Local Government! Ho-hum! Not to worry. By election time they will have it all sorted out. [Text] [Belize City THE REPORTER in English 24 Apr 83 p 1]

CSO: 5000/7573

CHILE

WATER CONTAMINATION REPORTED--Water contamination in 12 areas is "serious." In 10 of the 12 areas studied, water contamination is "dangerous" or "serious," according to data presented at the Second Session of the National Meeting of National University Scholars on Environment. The meeting ended yesterday in Valdivia, where it took place under the auspice of the Southern University. It was attended by scholars from the entire country. Among the most frequent pollutants found in water, much of it for regular human consumption, are industrial debris, second washings of minerals, and domestic wastes. In the metropolitan area, the analysis of water from the Maipo river, that supplies drinking water to more than 4 million inhabitants, there is an abundant amount of these three kinds of pollutants, to a "serious" degree. The report of the university scholars suggests that the Council of Rectors be the group to centralize research and promotion efforts available to them. The participants in the Valdivia session reported that the most serious effects of water contamination are organic decomposition, exhaustion of dissolved oxygen, and toxicity, eutrophic contamination, bacterial contamination, and high concentrations of mercury, etc. [Text] [Santiago TERCERA DE LA HORA in Spanish 17 May 83 p 14 A] 8255

CSO: 5000/2029

WARNING SOUNDED ON OVERDEVELOPMENT OF POINT LISAS

Port-of-Spain TRINIDAD GUARDIAN in English 4 May 83 p 6

[Text]

OVER-DEVELOPMENT of the Couva-Point Lisas area could create similar problems of over-urbanisation, congestion, environmental deterioration now being experienced in Port of Spain.

This has been noted in the National Physical Development Plan in the section dealing with population and settlement and which has identified the Couva-Point Lisas area as one of the major growth areas.

The report noted that the Point-Lisas complex was the first stage in the implementation of the national urbanisation and industrialisation strategy and should be well established by 1985, when several of the capital and supporting service industries and much of the infrastructure and housing should be on the ground.

It noted that after 1990, growth in the area should be self-generating.

According to the report, it was proposed that that growth centre should yield population targets at Couva-Point Lisas of no more than 75,000 and at

Chaguanas of 60,000 by the year 2,000.

Reasons given for those suggestions are:

- The overall national strategy proposes four growth centres the development of which will facilitate the settlement objectives of regions' equilibrium and equity identified earlier.

- Over-development of Couva-Point Lisas can almost certainly create similar problems of over-urbanisation and the other problems now experienced in the Port of Spain urban region.

The report stated, too, that the loss of high capability agricultural land in the Caroni West area around Couva-Point Lisas could be ill-afforded.

Massive urban development, it stated, will alienate thousands of acres of the country's best farm land.

At the same time, it

[two lines blurred]
area would not generate self-sustaining growth.

In a footnote to the report, the report stated that the possible impact of industrial developments on the West Coast upon the Gulf of Paria waters was an important consideration which needed to be carefully researched.

OFFICIAL FEARS EROSION MAY ENGULF FARAKKA CANAL

Calcutta THE SUNDAY STATESMAN in English 24 Apr 83 p 3

[Text]

MR Nani Bhattacharjee, West Bengal's Irrigation Minister, said in Calcutta on Saturday that if the erosion of the Ganga downstream of the Farakka Barrage in Murshidabad district was not checked it would ultimately engulf the feeder canal built at a cost of Rs 180 crores.

"It is progressively eating away valuable land, towns, villages, orchards, roads, railway lines and power lines and displacing large population from the area".

Mr Bhattacharjee, who will leave for Delhi on Sunday to appear before the Union Minister of State for Irrigation, said that the cost of protecting the right bank of the Ganga in this region from erosion would be about Rs 180 crores and it was impossible for the State Government to undertake on its own such a costly project.

The Minister said that he would request the Union Government to finance the project and give immediately about Rs 20 crores annually so that the anti-erosion work could be taken up in a phased manner.

Mr Bhattacharjee said that it was understood that the Bihar Government which had earlier submitted several schemes to the Central Water Commission and the Union Ministry of Irrigation, embarked upon a number of these for utilization of the water resources in the Damodar valley.

He said he would convey the demand of the West Bengal Government to the Union authorities not to accord sanction or clearance for any of these schemes submitted by Bihar till the issue of acquiring additional reservoir land in Matihon and Panchet dams was settled according to the provisions of the Inter-State River Basin Agreement between the Governments of West Bengal and Bihar.

In the interest of both the States the Centre should dissuade the Bihar Government from executing any of their schemes in the Damodar valley basin in Bihar before the additional reservoir land was acquired for Matihon and Panchet dams.

He said that for sponsoring of irrigation and flood control projects of West Bengal for World Bank assistance a total target of irrigation potential of 2.31 million hectares of major and medium projects had been programmed to be achieved by the year 2000. This would require an investment of about Rs 2,500 crores. The State Government would seek external assistance to achieve the target within a stipulated time, he said.

The Centre would also be requested to take necessary action on the Subarnarekha Barrage Project, Upper Kangsabati Project, modernization of Kangsabati Project, Dwarakeswar-Gandheswari Reservoir Project, Ajoy Reservoir Project, modernization of the DVC Barrage and Irrigation Project and Ghatal Master Plan.

PAPER REPORTS COURT BATTLE ON GANGES POLLUTION

Madras THE HINDU in English 21 Apr 83 p 6

[Text] New Delhi, April 20.

A battle is on in the courts on keeping the Ganga from from pollution.

The parties to the case are the Uttar Pradesh State Pollution Control Board and the Kanpur Municipal Corporation.

The Board hauled the Corporation to the court of the Chief Judicial Magistrate who ordered it to take adequate measures within six months for the diversion of dirty waste water being let into the sacred river.

Contesting the ruling, the Corporation has filed a revision petition against the judgment.

This information was given in the Lok Sabha today by the Deputy Environment Minister, Mr. Digvijay Singh, in answer to Mr. Narayan Choubey. However, the reply did not indicate since when the legal row was on.

Not fit even for bathing: Mr. Ratansinh Rajda and two others wanted to know if the Government's attention had been drawn to experts' view that the waters of the Ganga and Yamuna flowing through Uttar Pradesh were not fit even for bathing.

An electric crematorium in Kanpur was nearing completion which would help control disposal of bodies into the river, Mr. Singh said giving details of the steps taken to check pollution of the Ganga.

There was a proposal to construct an electric crematorium in Varanasi also, he added.

A scheme to divert the dirty water of two drains upstream of Kanpur and pumping it on to the sewage farm had been prepared, the Minister said.

A feasibility report had been prepared on collective treatment of tannery effluents in Kanpur and a scheme for protection of ghats and control of pollution in Varanasi was being implemented, Mr. Digvijay Singh added.

The water quality of the river in Uttar Pradesh, Bihar and West Bengal was being monitored at 45 locations by the Central Board for Prevention and Control of Water Pollution, he said.

The following are points from other answers:

Applications for licence: The special cell set up in January this year has approved five out of 14 applications received from non-resident Indians for setting up industries in the country.

No ban on parties: The Government has no proposal to ban any political party or organisation allegedly propagating communal hatred, casteism and violence.

Extremists getting foreign aid: The Government is aware that some extremist organisations in the North-East have foreign links and have received foreign assistance including training facilities. The maitai extremist bodies as also the MNF and its allied bodies have been declared unlawful associations and security measures have been stepped up and strict vigil continues to be maintained on the border.--PTI.

CSO: 5000/7037

BRIEFS

POLLUTION-RELATED RESPIRATORY DISEASE—Medical examinations conducted on about 2000 natives on communities in the Yavneh region, close to Ashdod, have shown that many of them are suffering from respiratory diseases which stem from the ongoing pollution of the air in that vicinity, from nearby industrial plants. Shraga Shemer, chairman of the regional council of the Yavneh district, sent an urgent letter to Interior Minister Dr Yosef Burg, in which he warned of the situation, and protested the fact that factors involved in the matter have avoided taking the steps necessary to prevent the pollution. In the letter it was noted that although the examinations were of "only" about 2000 children, there are in the area thousands of children and youngsters as well as many adults, who suffer from difficulties in breathing as well as respiratory diseases as a result of pollution. In the face of this injury to health, it was demanded of the interior minister that he take urgent and immediate steps. "Until now, we have feared this situation, and now, to our sorrow, the fear has become a reality, and the discoveries of the health ministry have provided a basis for those fears", it was said in the appeal to the interior minister. Aside from the pollution caused by the factories in the area, the fear was also expressed that the use of subterranean waters constitutes a danger to the health of the drinkers. Members of the regional council of the Yavneh district say that the interior ministry is responsible for implementing the law which is supposed to assure the quality of the environment for the health of the residents and the quality of their lives. Therefore, "the interior ministry must exercise its authority, without compromise, to force the factors which are endangering the health of the residents to cease polluting the environment", say the residents who are about to conduct a series of protest actions. The reporter for HATZOFE adds that the struggle of the communities of the Yavneh district against pollution has been going on for many years, and in spite of repeated promise by the city government of Ashdod, the ministries of interior and health, as well as the Electric Company, whose power station at Ashdod is the source of the pollution, to take careful measures, nothing has been done until now, and the residents of the area are suffering even more. [Text] [Tel Aviv HATZOFE in Hebrew 21 Apr 83 p 4] 7075

WATER OPPOSITE JORDANIAN DRILLING SITE--Water was found in an Israeli drilling 2 days ago in the area of Al-Hammah, opposite the Jordanian water drilling on the banks of the Yarmuk River. The drilling supplies about 200 cubic meters of water per hour. It began last week, and an authoritative Israeli source said that this is in "retaliation" for the Jordanian drillings. The Jordanians retaliated on the "retaliation" by erecting a few more drilling towers in the last few days. About a year ago the Jordanian Authorities began a series of water drillings in the Al-Hammah area. These drillings are carried out by foreign companies and are very close to the Israeli road leading to Hamat Gader Baths. Authoritative Israeli sources on water affairs clarified already a few months ago that the Jordanian drillings, which are done near the Yarmuk, will damage future Israeli water sources. About a week ago an Israeli drilling was begun in ('Ayn Sa'it) by a Meqorot subsidiary [Israel's water company], opposite the Jordanian drillings. [Report by Sha'ya Segal] [Text] [TA221032 Tel Aviv MA'ARIV in Hebrew 22 May 83]

CSO: 5000/4522

MUCH OF AFRICA EXPERIENCES SEVERE DROUGHT

London AFRICA NOW in English May 83 pp 76-79

[Text] A group of British parliamentarians pitched into the hullabaloo on Easter Sunday. They accused the *Sunday Times* of descending "to the blatant level of propaganda" and demanded that "the damage done should be redressed immediately by acknowledging that you were misled by wrong information."

In a joint letter, the 15 MPs — all Labour left-wingers — also expressed concern that allegations that "food for starving children was being used to acquire Soviet arms could be responsible for the withholding of desperately needed aid" to famine victims in Northern Ethiopia.

At the heart of the controversy is an article in the *Sunday Times* of March 27 by Simon Winchester, who alleged that Western food aid for the drought-stricken region was being diverted to feed the Ethiopian army and, "to an increasing extent, to the Soviet Union to help meet the regime's huge arms bills."

He also said that even home-grown grain and locally-milled flour are on Ethiopia's export list to Russia.

At face value Winchester's contention appears suspect because his sources would all be branded by the Addis Ababa regime as "secessionist and reactionary elements and their collaborators" — official nomenclature for the Eritrean and Tigrayan nationalist movements and foreign groups who visit rebel-controlled territories.

More suspect is the British MP's categorical statement that a gamut of people from aid dispensers to journalists "have, time and again, publicly attested to" the Ethiopian Government's "scrupulous" distribution of relief to the hungry.

Whether the parliamentarians were outraged on genuine humanitarian grounds or because, as one Ethiopian dissident put it, of their "ideological kinship with the military clique" in Addis Ababa is a matter of conjecture. What is clear is that one of the signatories, Stan Newens, visited

Ethiopian last August with his House of Commons colleague, Andrew Bennett, and has never disguised his sympathy for Chairman Mengistu's government. Bennett declined to be a party to the letter to the *Sunday Times*. According to a well-informed source, he did not agree with its contents.

Although Winchester has sown seeds of doubt around the food aid issue, no humanitarian organisation, including Save the Children Fund and Oxfam, has come out with tangible evidence to refute the allegations.

Africa Now asked Colonel Hugh Mackay, director of Save the Children Fund's overseas department, whether there was a guarantee that food aid for the needy does not go astray. He said: "This problem affects all donors. It is difficult to be absolutely certain and to stop it from going elsewhere."

He added that he makes certain that every item of aid and grants reaches the people through his field workers in the country.

In a letter to the same newspaper, field workers of both organisations have said that "very large quantities of wheat, clearly marked as donations of the EEC, were being distributed to the people" in the affected areas. But this still does not answer the crucial question as to whether or not some of the food aid package ends up in the barracks.

The field workers admit that all is not well in the drought-stricken regions. They said the army has to protect convoys of food supplies "where they are likely to be attacked" and alleged that "if captured, such supplies can then be shown as evidence of misappropriation by the army".

Although critics and supporters of aid are talking at cross-purposes, it is clear they have the plight of famine victims at heart. Every evidence suggests, however, that relief has been used by the army as far back

as December 1979 when British journalist Simon Dring filmed stockpiles of EEC food aid in military camps in Massawa when they were overrun and captured by guerrillas of the Eritrean People's Liberation Front (EPLF). A Swede, Goran Assbring, also produced visual evidence of such misuse when the EPLF captured Nakfa the same month.

The same year also saw the accidental discovery by a harbour official at Assab of *t'ef*, the staple food of highland Ethiopians, being loaded onto a Russian vessel. A sack marked coffee fell off and burst during loading revealing *t'ef*. The official's investigation showed that a shipload of the precious cereal was on its way to the Soviet Union. Whatever the purpose, the news fired popular imagination to a point that it was claimed "our *t'ef* is being used to produce vodka for the Russians".

That food is not reaching the hungry in Tigray is substantiated by a team from an Addis Ababa-based Ethiopian inter-denominational charity, the Christian Relief and Development Association (CRDA), who visited the region in September. Its findings are reminiscent of the 1973 famine when grains were withheld, hoarded or sold in the open market.

In a report to the World Council of Churches on October 26, the team said it was told by the Chief Administrator that out of a ration of 65,570 quintals earmarked by the Relief and Rehabilitation Commission (RRC), an official body, only 2,575 quintals have been received. The governor appealed to non-governmental agencies to help the province. No reason was given why the projected quantity was not delivered.

The group could not visit Axum, Ethiopia's most ancient city, because the Chief Administrator said he could not guarantee their safety. Axum lies directly in territory held by the Tigray People's Liberation Front (TPLF), a movement waging an armed struggle for self-determination.

THE DROUGHT VICTIMS

Arsi	8,000	Ilubabor	7,000
Bale	*	Kefa	*
Eritrea	713,000	Shewa	160,000
Gamo Gofa	200,000	Sidamo	85,000
Geljam	20,000	Tigray	1,000,000
Gonder	300,000	Welega	30,000
Hararghe	150,000	Wello	750,000

*Statistics yet to be compiled. No details about 104,000 pastoralists in Wello are available. There are 1,800,000 displaced people in Hararghe, Bale, Sidamo, Eritrea and Gonder. (Official figures of the Relief and Rehabilitation Commission, Addis Ababa).

The TPLF claims that meteorological calamity coupled with "crop destruction with sulphur by troops of the Derg" is responsible for the famine.

That portion of highland Ethiopia was described by an Englishman, Walter Chichele Plowden, in 1854 as "a noble territory blessed with a climate that may, perhaps, challenge comparison with any in the world". Even the Afar nomads who used to roam its lowlands were, said Plowden, tending "the fattest cows and sheep I ever met with out of England." It has also seen 19 famines between 1540 and 1800 and, in recent memory in 1958 and 1973, when thousands perished.

At the crossroads of north-western and central Ethiopia, Tigray has always been stampeded by marauding feudal troops and suffered, as Scotsman James Bruce put it after his visit in 1768-1773, from the "greatest of all plagues", bad government.

The underlying causes of the catastrophe are being buried under the debris of an interminable controversy. As one observer put it, whether or not the badly needed aid is going to the wrong address is now taking second place to a growing suspicion that food is being used as a political weapon to subdue dissent.

Examples of such strategy are legion in Ethiopian history: the collapse of the Welaita kingdom through systematic starvation of the people by Emperor Menelik, towards the end of last century; and the use by the late Emperor Haile Selassie of starvation as a weapon during the Weyane uprising in Tigray in 1943. An AFP dispatch from Addis Ababa on March 31 reported that "the Addis Ababa authorities are trying to attract former guerrillas and refugees who had fled to Sudan back to regions under government control by handing out food".

Wooing refugees has, by all accounts, failed to produce the desired effect — despite a \$20m resettlement programme devised jointly by the Ethiopian Government and the United Nations High Commissioner for Refugees (UNHCR). The number who returned was a poor 283 for 1981 and 291 for 1982.

The project is an offshoot of last year's "carrot and stick" strategy — the disastrous "Operation Red Star" in Eritrea — which was a combination of a war of attrition and economic reconstruction.

The alleged successes of the operation are still reverberating in the state-controlled media, but nothing is being reported about the famine. A recent visitor from Ethiopia was shocked by the horror pictures of the dying and the dead on British television. At first, he said, he thought it was a replay of the "hidden famine" that carried off 300,000 people in 1973.

It was this cover-up of the catastrophe that precipitated the downfall of the Haile Selassie regime, launched the military to power and led to mass executions of the entire feudal ruling class.

Col. Mackay believes starvation will continue to visit Ethiopia because "the principal causes of the famine in 1973 have not been resolved." In his view, overpopulation, erosion and monoculture in the drought-stricken region constitute an unholy trinity. But he also pointed a finger at politics as one primary cause of mass starvation.

He said: "Development must be made in such a way that the areas are supported not because of any political reasoning but because people are in urgent need of aid."

A quick look at the map shows that the worst-hit are regions of the country where organised rebellion is challenging the authority of the central government: Tigray, Eritrea, Sidamo, Ogaden, Bale and Wello. The regime admits that such "civil unrest" exists in those areas. It has been conscripting the young rural adult population — bringing expenditure in 1979 to \$2,374 per soldier. The army is estimated to cost 5m birr a day.

Another area of concern is the government's lack of a long-term strategy to counter famine. The man who broke the news of the latest disaster, Save the Children Fund's Mark Bowden, reported to headquarters that the victims "are being issued with rations by the local administration and told to return to their home area."

"If numbers (of refugees) increase," he warned, "it is unlikely that this policy will be successful."

Such a solution was tried and failed in 1973. The difference between then and now is that the ruling military regime's coffers are fatter than its predecessor's. The Derg has increased its sources of income many times over after it nationalised rural lands, houses, industries and banks, and instituted strict means of collecting taxes. It is also the biggest landlord in the country.

Ethiopia-watchers recall the 8% tax levied each month from the salaried population in 1975/76 to finance the needs of the RRC. Voluntary donations in cash and in kind, including skins of animals slaughtered to mark religious holidays and clothes, have also been made over the years in response to the "call of the Motherland". This became mandatory after Somalia's ill-fated invasion of Ogaden in 1977 when "free labour" was added to the list of required contributions. More significantly, Ethiopia's share of EEC aid has been increasing yearly, making it the largest single beneficiary of the community's aid in Africa.

Admittedly, governments cannot be held responsible for the misdeeds of nature, but observers point out that a replay of the 1973 tragedy should not have happened in view of the changed circumstances in the country. They argue that improved infrastructure and logistics for mercy operations — a larger air force, a fleet of modern helicopters and a huge number of army trucks topped by millions of birr in revenue — at the disposal of Chairman Mengistu's regime should have made foreign aid only a last resort ●

Rains Fail for Second Year

Southern Africa is currently being hit by one of the worst droughts in the region's history. No country has escaped it although some — Botswana, Swaziland, Mozambique and Zimbabwe — have been more severely affected than others. Crop production has been disastrous throughout the region, livestock and game are dying and water reserves are rapidly being depleted.

This year's drought is the worst to hit Botswana since 1975. The livestock industry, vital to Botswana's economy, has suffered substantial losses. The country has appealed for international aid to save its cattle industry. The expected cereal yield of 21,000 tonnes for 1983 will fall far below the estimated national consumption of 120,000 tonnes. Wardens in the country's many game parks have reported hundreds

of bloated animal carcasses lying on parched river beds.

Swaziland, usually cool and rainy at this time of year, has been equally devastated. Planting of this year's crops was severely hampered and only the mechanised cotton-producing areas were able to overcome the unsuitable ploughing conditions. There is a shortage of drinking water and thousands of cattle continue to die as a result of the lack of fodder and water. Offers from the Swaziland Meat Commission to buy cattle from villagers has been met with frequent refusal because of the traditional Swazi association between cattle and wealth.

In Mozambique, corn, potato, citrus fruit and cassava production has been drastically reduced in the southern province of Maputo. Virtually every dam in the area has dried up and the authorities have been

forced to slaughter cattle before they die of thirst. Although the two-year drought in the northern province of Nampula — threatening the survival of nearly half a million people — ended this year, many are still affected as the staple crop cassava takes more than a year to mature. The UN Food and Agriculture Organisation (FAO) is working with the government Natural Disasters Commission in an attempt to establish an early warning system.

Both South Africa and Namibia have experienced the unlucky combination of severe drought and recent fierce hailstorms, which damaged existing crops. The drought has now resumed and cattle farmers have begun to destock, while the sheep industry in Namibia is said to face ruin.

Western Zambia has been most seriously affected by the drought. The area has experienced widespread crop failure and relief supplies are not reaching outlying areas because of poor road conditions. The Zambian Government is co-operating with aid agencies in an attempt to prevent total famine. The FAO is providing millet, sorghum, maize and beans, while the Netherlands together with NORAD (Norwegian Agency for Development) in a longer-term project have agreed to supply agricultural and building tools for the sinking of new wells. The World Food Programme will provide food relief until the harvest season later this year, but treacherous road conditions are also hampering their task.

Zimbabwe has perhaps been worst affected. The first rains for three months came in late February, too late to help dessicated and barren croplands. During 1981-82, most of Zimbabwe received less than 60% of the normal rainfall, while Matabeleland recorded only 40%. The pattern this year is likely to be the same.

Emergency officials in Zimbabwe have warned that 2m people, particularly children, could starve to death. The loss of 500,000 cattle is threatened while maize production has fallen from 2.4m tonnes in 1980-81 to 1.4m tonnes in 1981-82. The most seriously affected areas are the provinces of Matabeleland and Masvingo.

In Matabeleland, the country's primary ranching area, stock is being devastated by the lack of grain and water. Some reports estimate that 250,000 head of cattle will have to be slaughtered if they cannot be moved to better grazing areas.

In Hwange National Park, in north-western Matabeleland, a 19-month dry spell has brought death to thousands of wild animals. Food shortages in the area were initially alleviated by food stocks brought in from other parts of the country, but the present security situation has prevented continuing relief measures. In December, the government cut off all food and

drought relief to Matabeleland. After local people were seen reduced to eating grass seeds, aid was resumed in two out of the six areas affected. Reports of starvation in the other four areas, however, suggest that the situation is just as critical.

Similarly, measures taken by the Ministry of Water Resources and Development, including the transportation of drinking water to the worst affected areas and the drilling of additional boreholes are also reported to have been undermined by the security curfew in the south-western province.

The area near Masvingo is commonly known as the "breadbasket of the province." Also Masvingo Province's intensely cultivated communal lands contain nearly half of the rural people of Zimbabwe. In 1981 Bikita, for example, contributed 42,000 tonnes of maize. Last year's drought brought yields down to 20,000 tonnes but in 1983 the productivity will be nil. In temperatures of 47 degrees, cropfields have been reduced to dry dust.

The late February rain has not helped the cattle. Cows calved late and they have so little milk that calves are not getting the usual immunities. Furthermore, there is no supplementary milk feed or fodder available in the country. There is no growth in the veld and an abnormal boom of mopani worm has stripped grazing browse.

Surface water is scarce and evaporation has been at the rate of two inches per week. Some dams have dried up completely. The Commercial Farmers Union is urgently negotiating with the Ministry of Agriculture and other organisations to try to alleviate the situation in the province.

Children in all the affected areas are suffering from malnutrition. 60% of rural children under five have been affected, 40% severely. At least 29 babies have died in Eastern Manicaland. Malnutrition increases susceptibility to other diseases like diarrhoea, measles and chest infections. Inadequate water supplies, rationing and polluted drinking water have led to greater risks of epidemics like typhoid and cholera.

The government has embarked on a major drought relief programme supplying food especially to the communal areas (with the present exception of the no-go areas in Matabeleland).

However, this has been hampered by problems of food distribution. Transport difficulties have caused problems in handing out relief aid and the milling companies are unable to meet the rising demand for grain. A spokesperson from the Agricultural and Rural Development Authority (ARDA) suggested that people should have access to small local grinding mills which would take the pressure off the national milling companies.

At the request of ARDA the sociology department of the University of Zimbabwe carried out a study of the difficulties which the rural population experienced in combatting the drought. Several points emerged:

- The traditional method of stock-holders dealing with stressed resources was for people to move their cattle to less densely populated areas; this is no longer possible in Zimbabwe. Alternatively people are reluctant to sell their livestock, a traditional marker of wealth.

- Post-independence distribution of food relief has encouraged people to expect government assistance rather than fend for themselves.

- The replacement of low-yielding millets and sorghums by locally-bred hybrid maize has increased the vulnerability of crops to drought.

- Higher producer prices and subsidised mealie meal have made it cheaper for people to grow maize, sell it and buy meal rather than mill it locally. Many farmers in the rural areas therefore sold surplus crops

to the Grain Marketing Board and with the onset of the drought had nothing in storage.

The voluntary agencies have worked in tandem with the government in supplying food relief but their programmes have been linked rather to self-reliance schemes. Novib, a Dutch aid programme is operating in the Binga district by Lake Kariba where food is supplied to people who work on projects for the benefit of the community.

The Lutheran World Federation is organising projects along similar lines to make people self-sufficient in water in drought-prone areas of the country. With the help of local people, small dams are being built for irrigation. When these are complete, vegetable gardens are begun on a co-operative basis. Christian Care is trying to offer more long-term solutions although they are also involved in food distribution. In an attempt to prevent people becoming dependent on food hand-outs, they are helping villagers to plough land in new resettlement schemes and supplying seed and fertilisers ●

CSO: 5000/184

FLOODS CAUSE DAMAGE AFTER HEAVY RAINS

Bujumbura LE RENOUVEAU DU BURUNDI in French 8 Apr 83 p 5

[Article by F.B.: "Heavy Flooding Following Torrential Rain"]

[Text] The floods that followed the torrential rain on the Bujumbura slope of the Zaire-Nile watershed did considerable damage to factories on the shore of Lake Tanganyika that are close to Ntahangwa River. Part of the industrial area was affected.

This has become a regular occurrence. For the past several years, during the major rainy season, Ntahangwa River has been receiving a great deal of water in its upstream portion (from the mountains of Buhonga, Mugongo...). Catastrophic flooding has then developed from the Ntahangwa Bridge (near Ngagara) and downstream, damaging areas, warehouses, products, equipment and other material necessary for smooth operation of the industries and companies in that sector.

The most heavily affected have been the COGERCO and Rafina cotton mills, the Oil Storage Company (SEP), the Brewery and Lemonade Plant (BRARUDI), the National Office for Construction Materials Importation (ONIMAC), and TRANNAFF (foam rubber manufacture).

Not to mention Boulevard du 1 Novembre, which was full of water due to the rise in the Ntahangwa and passage was virtually impossible till the "Cleanup" Project truck came to pump up the water.

The staff of the Oil Storage Company had to evacuate their offices and work stations riding on the big supplying tank trucks of the depot.

Considerable material damage is regularly caused by flooding of the Ntahangwa River, produced by the torrential rain as is now falling on the mountains and the city of Bujumbura.

A half meter's overflow puts all the offices, warehouses, cotton bales, grain, and other products of these factories entirely under water. Workers struggle for days to clear the tons of mud carried by the current and deposited in the factories and offices.

The Oil Storage Company is concerned that there may be an interruption in gasoline supply to the city because the tank trucks cannot reach the fuel distribution points. The fuel distribution motors have to be cleaned and rewound, the offices recarpeted, pipes repaired, and then there are all the soaked documents. The personnel are on compulsory holiday because it is hard to cross the lagoon. The effort is being made to remove the muddy water to the lake by pumps, but it is a task that will take several days.

Moreover, we must pray to God that we will not immediately get more rain. It is hard to estimate the damage, but it appears to be serious.

On each occasion, it is always the same areas that are affected by the Ntahamanwa's flooding and there is always the same damage... What can be done? That is what everyone is asking. Should we build a dike or perhaps dredge the river to give it a definite course and channel the water directly to Lake Tanganyika?

Millions of Burundi francs are lost regularly and harvests destroyed by this flood water that overflows from the riverbed. A lasting solution must be studied.

9920

CSO: 5000/167

DEVASTATION OF IVORIAN FOREST BY FIRE DESCRIBED

Dakar AFRICA in French Apr 83 pp 83-85, 109

[Article by Louis Guilain: "Toward Desertification of the Ivory Coast?"]

[Text] This year, the brush fires in the Ivory Coast are perceived as a national catastrophe. In the past, people were concerned about them; in 1983, they are viewed with distress.

Thousands of hectares of plantation have burned, many villages have been destroyed, there have been deaths and suicide attempts. But beyond these calamities of the present, the drama of the future is taking shape on the horizon, under a stormy sky. The Ivory Coast peasant's fires prepare for the coming of the hoe and the daba in the forest area, and an FAO [U.N. Food and Agricultural Organization] expert prophesies: "At this rate, the Baoule 'V' will descend all the way to the sea within 2 or 3 years."

It could all go very quickly; there are no more than 4 million hectares of forest left to sacrifice, out of 16 million in the beginning.

In the Ivory Coast of these early days of 1983, borne by the endlessly blowing harmattan, a cry of alarm rang out: FIRE! The word was written in blazing letters in the local newspapers, and, "as if to make them truer," FRATERNITE-MATIN printed them in red.

For anyone who knows the country well, this alarm seems surprising, because every year at the same time, the hunters and the peasants have an understanding about setting fire to the brush. Slash-and-burn is a common practice, and under certain conditions--very strict ones--it is even recommended by Waters and Forests, which condemned it unmercifully not so long ago.

Where does today's tragic atmosphere come from? The economic and social council considers "that it is necessary to act urgently in the face of the disaster." For "it is indeed a national disaster," our colleague Keke Yacouba specifies, and his colleague Sophie Chegaray, in the same daily, reports the conclusions of a FAO expert for an emergency plan. Mr Larouche, he being the one involved, is pessimistic: "In two or three dry seasons identical to the one of this year, the Baoule 'V' will descend all the way to the sea."

The situation is thus a serious one, but it would be difficult to say that it appeared all of a sudden in all its horror, without the possibility of one's having been able to detect beforehand the premises of its present reality.

It should be pointed out here that fire has never before wreaked such extensive havoc. Unfortunately, 1983 is an exceptional year, all the more so in that it has been marked by direct aggressions against man himself. The brush has not been the only cause of this: plantations have burned, at a really infernal rate, villages have caught fire, and too often, people have died.

Cotton has naturally been the ideal prey of the flames. The cumulative losses have been counted in the hundred of tons: at Boundiali (21 tons), Seguela (18 tons), Beoumi (15 tons), Ferkessedougou, Notoun, Nanbry, Mankono, Tieningboue (50 tons), Gohitafla.

From Daloa to Bouafle, the magnificent plantations of SODEPALM [Company for Development and Exploitation of Oil Palm] are destroyed, and the Coconut Program between Divo and Daloa is now jeopardized, perhaps irretrievably. In Indenie, the cacao and coffee fields totally ravaged are now beyond numbering. The balance-sheet is just as lamentable elsewhere: 2,086 hectares of cacao and 296 hectares of coffee have fallen prey to the flames in the Hire district of the Dida region.

The deep south itself has suffered cruelly. Hundreds of tons of products have been burnt to a cinder in the region of Aboisso; the cacao plantation of a big planter in the region was wiped out, with 40 tons going up in smoke. Hundreds of SODEPALM's hectares fell prey to the flames. Allou Jean-Marie, which has fallen apart, is lamenting its 30 hectares of cacao, burnt up completely.

Slow Death

To lose one's plantation is catastrophic indeed, but there are worse things than that; and we refer to those who have seen their homes burnt to ashes: 40 cabins destroyed near Bondoukou, 35 at Boro-Borotou, 3 villages in Bouafle and 4 in Gohitafla; and the village of Konebudan is wiped out. At Trafla, in the subprefecture of Vavoua, a market town of 2,000 was 90-percent destroyed.

Even so, the progression of horror has not reached its highest peak. As we said: people have died. It would be difficult to give a figure for those who have died from fire, directly or indirectly. But there is no doubt that there have been far too many of them.

In Angakoffikro, in the subprefecture of Didievi, three elderly women were burnt to death, and a baby was asphyxiated. At Daoukro, the prefect has reported several suicide attempts.

It should be recognized that the Ivory Coast is paying its dues today, fire being not the least of them. The tragedy, though, is not situated in the present, as sad as it is. Fire can indeed destroy a plantation, but it can be re-established. A house is burned down: it will be rebuilt.

The very persons who have died are not irreplaceable. What has to be looked to, and avoided--in the future, the more distant future--is the desertification that will follow the death of the forest by fire. In desert, no form of life is possible. It is total annihilation. "Between the sand and God, there is nothing."

An Old Practice

How can brush fire be the instrument of this slow death?

The practice of brush fires goes back to the night of time, since men first made a spark by rubbing bits of wood together. They learned the benefit of this for hunting and crop-growing, while at the same time perhaps savoring the somewhat sadistic pleasure of the pyromaniac.

Who has never had fun lighting a fire? Isn't it true that one speaks of fires of joy? Young people like campfires, and in France, the fires of Saint John are celebrated.

For a fire, one becomes an artist, a poet; one considers oneself God, for fire also gives a feeling of power to the one who causes it.

As for brush fires, they are privileged in the Ivory Coast, and when an agouti is driven into a hole, there is no hesitation about burning the area surrounding his hiding-place. This practice is not without danger, and before the last war, at Niakaramandougou, a catechist was the victim of it. He burned in the flames, along with the pigs that were the fame of the Lyon fathers, the founders of the mission.

On that occasion, there was also talk of malevolence and incompatibility with the local fetish; but our problem does not lie there. We point out only that the young boy died in the fire. Such a risk, though, has never caused the peasant with a match in his hand to hesitate.

For a long time, the forest was not bothered by brush fires. It is, in fact, wet under the thickness of its foliage, and it is thus protected--up to a certain point. Insensibly, for decades, the edge of the wood has retreated before the hoe and the daba.

The violence of the blows that are struck against the forest today is not the consequence of a deliberate action. The peasants have not penetrated it by force; they have pecked away at it by following the paths marked out by the foresters themselves.

To move the products of their cutting, the woodcutters created some main roads necessary for their logging trucks. From these main routes, cutoffs were made through the jungle in order to reach their preferred stands, with very low density per hectare: from two to five trees, three being the usual average figure.

Each tree cut down left a clear zone around it of no interest to a farmer. Besides, it is inaccessible when the brush reasserts its rights and covers

again the penetrations that it had temporarily suffered during the logging operation.

The Vulnerable Forest

For these reasons, the peasants do not adventure very deep. They reserve for themselves the main forest roads, whose sides have been cleared to a width of 10 to 15 meters. This is the clear-cut. The saplings have been removed from it; only the big trees remain. On the clear-cut, the peasant prepares his land. To begin, he burns for a length of about 50 meters, with the wind helping. The brush, the dry grass, the dead wood then flame very fast. The peasant's responsibility begins with the clear-cuts, the starting-points for the inexorable encroachment on the forest.

Thirty years ago, this responsibility did not appear so dramatic. The grass burned, the charred wood was gathered into bundles, but the big trees were spared.

The fires progressed up to the edges of the forest without threatening it seriously. But over the years, the climatic conditions have changed. The peasant, for his part, kept his customs unchanged, without taking account of a growing drought or of the harmattan that was extending its stay well beyond its usual limits.

The fire, stimulated by the north wind, is not being satisfied today with the parcel assigned to it for the year in progress. It is taking over again the land burned last year, on which only dead wood subsists on thin, loose soil, now sterile.

Everywhere, the fire is finding terrain favorable to its extension, up to the now vulnerable forest. On the spot, we met one of the greatest specialists on forests in general and the Ivorian forest in particular: Jacques Caillard.

"Twenty years ago," he tells us, "between Bouafle and Yamoussoukro, the road ran between two impressive walls of trees and dense vegetation.

"In March 1983, the view is clear for as far as the eye can see. At Bouafle, the plantations of teak, that marvellous timber tree, are burnt to ashes. There is not a leaf on a branch."

The harmattan that has blown since the end of 1982, in a really exceptional manner, for long weeks, has caused acceleration of the phenomenon in the direction of the catastrophe that everyone knows about.

The hygrometry has fallen to 30 percent where it used to be 70 percent. Because of this, the big trees of the clear-cut areas have "lowered their branches" to the point of using up the last drop of sap. The giants of the forest themselves--so well-protected, it was believed--have given way in the face of the fire.

As one knows, the tree's propagation zone extends in successive circles from the sapwood toward the bark; with any crack, the bark splits under the pressure of the new wood replacing it. Today, from the bark to the sapwood, the fire has done its work. The wood is dead, and now it is reduced, in turn, to the level of fuel, contagious in its dryness, harmful to its still resistant neighbors that will burn in the same way. At this rate, soon no more will remain of the Ivory Coast than the REG [expansion unknown]. Indeed, the life cycle is no longer renewing itself. What is this cycle?

The Life Cycle

When the last of the bulldozers has pulled the last log out through the forest corridors and the woodcutter goes elsewhere to seek his fortune, the forest reforms and closes up again.

In the areas cleared by the cutting, fast-growth "light-loving" species shoot up.

Their value is negligible, but they have the merit of reconstituting the "cover" and making it possible for "shade-loving" species (valuable ones), which in 50 years will again constitute the glory of the sylvan cathedral, to be established under their protection.

Not only is this cycle threatened today, but worse still, it is stricken down to the sapwood, the heart. Jacques Caillard, again, told us of his great sadness in the face of the agony of the silk-cotton trees.

"Used in rotary-cutting, they offered the advantage of being relatively insensitive to fire. The quite thin septa of the root were vulnerable, but the tree's remarkable vitality favored rapid scarring-over of wounds.

"This year, the roots are burned and the giant tree now has only a blackened stump, which one expects to break with the least breath of wind."

At Vavoua, Dantzer, a German industrial group and among the biggest in Africa, specializing in transformation of wood, laments in the same way. There are 16 expatriates from the far-off FRG, who came in all confidence to exercise their talents.

The Culpable Peasant

The somewhat disillusioned director declares:

"At this rate, in 3 years we will not have a bit of wood!"

Will we have desert?

The forest is already dying, in its last extremities, and water is consequently [as published] rarer. (These days, there is even a shortage of it at Man!)

The Ivorian forest, rich in 16 million hectares at the beginning of colonization, has now shrunk to 4 million hectares.

The time has come to react. The danger has been noted on the government level, and the main technical departments should unite to find the fire guard that is anxiously awaited. What has been related above, despite everything, would tend to prove that the party mainly responsible for the hecatomb by fire is the peasant.

By carelessness and attachment to outmoded customs, but especially by misunderstanding of the laws of life and survival of his own environment, he is contributing to the loss of it. He defends himself, and the daily FRATERNITE-MATIN has echoed his arguments:

"We are adults; we know how to run our plantations; we do not need to be sensitized for that purpose." A canton chief further declares: "We are responsible people all the same; let no one imagine that we do not know what we are doing. These fires are coming from elsewhere. No peasant of Yakasse is responsible for this situation. One must look for the origins elsewhere."

The good faith of these fine people cannot be doubted, but it remains true nonetheless that in comparison with the past, they are crippled in the face of the new phenomena. They do not understand them, and their experience is no longer sufficient to ensure mastery of them. The peasant is culpable.

In the Ivory Coast, it is not good to criticize the farmer. President Houphouët-Boigny himself views himself as the first among the peasants, his own people.

And it is true that they are the essential elements for the advancement of the Ivory Coast, which owes to them its remarkable successes on the economic level. But this is no reason for closing one's eyes to their behavior when it is at fault. Things have to be made clear, for it would not be right to stop with this observation. The peasants are, above all, guilty of ignorance, and defending their errors is a bad way to defend them. It would be better to inform them.

In 1968-1969, the Ivorian movie company made a very good film about brush fires. Timite Bassory wrote it. In this tragic period of its ecological history, the Ivory Coast would find it to its advantage to see it again on television. An initiative of this kind is still awaited.

But the rainy season is near, it is true. Tomorrow, the flames will be extinguished without the aid of the firemen, the "canadaïrs."

The year 1984 is far off! So is the next fire. Between now and then, let us hope that we will have learned to "play with it."

EROSION THREATENING TWO OAU VILLAGE VILLAS

Monrovia DAILY OBSERVER in English 21 Apr 83 p 12

[Text] Two of the villas at the OAU village, built at the cost of several million dollars by the Liberian Government, may collapse shortly if immediate steps are not taken against the rapid encroaching erosion.

Already, some of the light poles installed on the seashore near the villas have been swept away by the erosion leaving the rest to fall shortly.

In an interview with the Daily Observer yesterday, a resident of the OAU Village said that last Monday night, the current from the sea was so strong that the waves washed the walls of the villa in which he resides.

The source noted that they had to dig the sand that was piled up on the walls of his villa by the current the next morning.

It can be recalled that sometime last year, the Ministry of Public Works had introduced a temporary measure to arrest the rate of

erosion by dumping crush rocks and laterites near the seashore.

This measure was introduced pending a response from Government on a request for \$3m made by the Ministry of Public Works to enable the Ministry to carry out the construction work at the seashore.

But the source revealed that the temporary work has not been done "since the rocks were brought here" by the Ministry of Public Works.

When authorities concerned fail to take immediate steps to counter the erosion, Government will lose the money spent for the construction of the villa, the source said.

CONSEQUENCES OF DROUGHT ANALYZED

Drinking Water Supply

Saint Denis TEMOIGNAGES in French 23 Mar 83 p 10

[Article by Yves Van Der Eecken]

[Text] The southern and western parts of the island have been suffering from drought for the last 2 or 3 months. The lack of water has reduced and even dried up springs and streams in the highlands that are the principal source of drinking water for the island. In time, if the skies do not yield their precious liquid, the drought could seriously drain our nonrenewable underground water reserves. That is the question we will examine today. In a subsequent article, we will look at the problems the lack of water poses for planners.

In the south, the CGE (General Water Company) is selling water to the towns of Etang-Sale, Saint-Louis, Saint-Pierre, Saint-Joseph, Entre-Deux and Saint-Philippe. With the help of Mr Baillard, CGE regional manager, we surveyed the situation in these various localities.

In all those communities, the water supply comes from two sources: wells and boreholes, catchment of springwater and torrents. The flow rate of the springs and torrents has seriously declined, as it also has for wells and boreholes. According to Mr Baillard, "they still flow, but who knows how much they will be yielding in another year?"

At Etang-Sale, the part of the town on higher ground has been without water periodically for 3 weeks. The lower part of the town, which gets its water supply from a well, has been spared. The Rivierites are on the brink, and the populace is at the mercy of the slightest breakdown. Quite fortunately, the water level at the Maison Rouge well, which supplies the whole town of Saint-Louis, is holding steady.

The work under way at Songe spring (at Bras de la Plaine cliff), which should be finished in 3 or 4 months, will enable the inhabitants of Entre Deux to go through the period of low water without major problems.

The lower part of the town of Saint-Pierre, below the Paradise Line, is supplied with the help of SABRAP [expansion unknown]. Its inhabitants should not experience any problems except for interruptions following strong rains. The question of whether the town or irrigation should have top priority when it comes to water supply has never been raised. Let us hope it is never raised. But if it must be, obviously drinking water would come first. It is important to note that SABRAP uses 35 million cubic meters of water for its irrigated fields, compared to 8 million required by the lower village.

As for the upper village, a third borehole is being sunk at Salette. It will take at least 5 or 6 months to fully equip it (pumps, sluice gates, etc.). Thus, it is possible this third borehole will go into service before the end of the year. Mont-Vert les Hauts gets its water from Hironnelles spring, whose flow has so far remained constant despite the drought.

The Lebon well and the Cazala spring are meeting the requirements of the town of Saint-Joseph. But the outlying areas are having big problems. Their only sources of water are small water-catchments, and the network of galvanized pipes is in very poor condition. Says Mr Baillard, "we can expect the worst."

The situation at Saint-Philippe is hardly reassuring. Work on the Baril well, begun 2 years ago, continues to drag on. Property disputes are the cause of the delay.

So the south is already having water supply problems, and those problems could get worse, unless work on the projects under way in Riviere Saint-Louis, Entre-Deux, Saint-Pierre and Saint-Philippe is diligently pursued. The situation on the outskirts of Saint-Joseph remains worrisome.

Meteorological Forecast Bleak

It has not rained for 2 or 3 months. However, calendar 1982 was very moist with adequate rainfall, except in the area bounded by the southern part of Cilaos circus, upper Tampon, Saint-Louis and Tevelave. Although we are at the height of the monsoon season, rainfall was so scant in November, December, January and February that there is no way to make up for the shortfall. The forecasters at the national weather service say the monsoon season is virtually over. We can hope for rain from July to October, like last year, but that is an extremely tenuous hope.

Below is a table comparing rainfall in the last 4 months with the "norms" (average rainfall recorded over the last 30 years, or at least since the installation of a measuring station).

We see from the table that November rainfall was above average, except in Saint-Philippe. In December, rainfall was below average in Saint-Louis, Mont-Vert, Grand Galet and Crete. Rainfall was low everywhere in January, and the drought deepened throughout the south in February.

It is important to note that the "norm" for the month of January was greatly distorted by Hurricane Hyacinth, a hurricane of a magnitude that only comes twice in a millenium. The amount of water it discharged could not be "amortized" fully in a 30-year average.

We thank the climatology division (Saint-Denis) of the national weather service for the information it provided us.

	Normal (1) Nov.	Nov. 82	Normal Dec.	Dec. 82	Normal Jan.	Jan. 83	Normal Feb.	Feb. 83
Et. Sale	34.5 (2)	99.1	68.6	70.7	141.1	29.4	109.0	17.9
St.-Louis (Town)	39.2	79.9	95.8	74.8	158.3	42.0	126.4	33.8
St.-Pierre (Terre Co.)	44.3	70.4	68.7	69.9	140.7	73.8	123.3	25.6
Mont-Vert	73.0	142.9	120.6	94.2	267.5	Unk.	211.1	51.1
St. Joseph (College)	69.0	79.7	96.5	96.5	215.7	183.0	206.9	120.0
Grand Galet	118.0	129.5	220.9	115.5	575.6	237.0	448.5	126.5
La Crete	171.0	243.0	284.8	198.3	570.7	524.0	573.9	412.5
Saint Philippe	284.8	271.5	280.3	120.1	472.1	746.9	411.9	231.0
(1) 30-year average								
(2) Rainfall given in millimeters								

Farmers in Etang-Sale Devastated

Saint Denis TEMOIGNAGES in French 24 Mar 83 p 10

[Text] For 2 to 3 months now it has not rained in the drought-stricken southern and western parts of the island. Yesterday we looked at the water supply problems urban users are facing in the south. The farmers are even more directly affected by the scourge, particularly the sugar cane growers in the non-irrigated areas, but also almost all the market gardeners in the southern and western parts of the island, according to Angelo Lauret, president of CGPER [General Confederation of Planters and Stockbreeders of Reunion].

CGPER has already made an approach to the authorities. It plans to make another, since the damages are becoming more widespread with every passing day. The solution: declare the western and southern parts of the island a disaster area, in addition (obviously) to the irrigated zones.

Some of the planters in upper Etang Sale have practically lost everything. This is what happened, for example, to Mr Oscar Tayet, whom we happened to meet. He is a smallholder, farming 800 "gaulettes" on two parcels, one at Sheunon torrent and the other at a place called Lambert. One need only

listen to his story to appreciate the extent of the disaster that has overtaken the planters of upper Etang-Sale and the western part of the island.

Showing us his wilted cane, the somewhat discouraged Payet told us: "moin minm la pie de couraze avek li [translation unknown]." He put a ton of fertilizer (at a cost of around 2,500 francs) on the 800 "gaulettes" he has planted in cane—a total loss. "A nout avi," he said, "gaingne pas rien dedan. I tire pa le pri de langre [translation unknown]."

It has not rained in Etang-Sale since cutting time. At age 59, Payet cannot recall having seen such a severe drought. "D'habitude, i fe in pe de secheresse, me i gaingne toujours in de bou de kann. Komela i gaingne pas rye [translation unknown]."

Mr Payet, and probably a great many other planters, are now asking themselves, "Mi voi pas koi i fo fer?" ["What am I going to do?"] He still has 6 children depending on him; the seventh, who is still living with him, works, but he says: "la fine arive son age [translation unknown]. Cercher un autre travail? [Look for a new vocation?]" He has thought hard about it. But at age 59, it is difficult to start a new line of work. So it is fitting to come to the aid of the disaster-stricken farmers, to keep them on the land, as our party urges. Mr Oscar Payet is ready to keep going. He does not want to give up his vocation in despair.

CGPER Demands Declaration of Disaster Area

TEMOIGNAGES yesterday began a series of articles reporting on the persistent drought afflicting parts of the island. In that connection, CGPER has just sent a letter from its president, Angelo Laurent, to the prefect [commissioner of the republic], calling on him to acknowledge the exceptional gravity of the drought by declaring the southern and southwestern parts of the island a "disaster area." Here is the text of that letter.

"Mr Commissioner of the Republic"

"I have the honor to direct your attention to the persistent drought which is ravaging the western and southwestern parts of our island. In the past, at this time of year, there have been numerous hurricane alerts. While hurricanes may be calamities from which we would wish at all costs to be spared, cyclonic depressions off our coasts at least bring rains that benefit agriculture. This year not a single depression has been seen. The absence of rain is wreaking catastrophic damage to our agriculture. Those whose living depends on it are having a very hard time. The dearth of water is causing serious damage to crops: corn, kidney beans, vegetables...are being burned up by the drought. The lack of water is condemning farmers and agricultural day-laborers to idleness.

"As it is virtually impossible to make up for the inadequate rainfall, growers will suffer a serious drop in their income.

"We expect that in due time the necessary steps will be taken to deal with the water problem of the region; but in the meantime, immediate measures must be taken to enable the growers to get through a difficult crunch.

"Given the exceptional gravity of the situation, the growers ask that the western and southwestern region be declared a disaster area.

"In the hope that the alarming predicament of these thousands of farmers will arrest your attention, I beg you to accept, Mr Commissioner of the Republic, my sincere respects. [Signed] Lauret Angelo."

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CSO: 5000/171

SAVE WATER OR PAY, MINISTER WARNS VAAL RESIDENTS

Johannesburg THE STAR in English 6 May 83 p 4

[Article by Stephen McQuillan]

[Text]

Mr Sarel Hayward, Minister of Environment Affairs and Fisheries, has warned people in the Vaal Triangle that they may face soaring tariffs if their "extremely disappointing" water savings are not improved.

At the opening of the R60 million Vaaldam-Zuikerbosch canal and pipeline system, Mr Hayward said he believed it was high time for water, like any other commodity, to be looked at as a valuable, marketable product.

The whole tariff structure should be drastically revised, he said.

Between March 8 and April 30 consumers saved a mere 3,6 percent on the amount used during the same period last year in the Rand Water Board (RWB) area.

By the end of May this would probably rise to 3,7 percent — about 5 1/4 days' supply at the present rate.

"To say that this is extremely disappointing would be a gross under-

statement and, unless the amended restrictions applying from May 1 are more successful in obtaining the co-operation of consumers, there will be no alternative but to take more drastic steps," Mr Hayward said.

Water administrators had already said the way charges were worked out was unrealistic.

"There's going to have to be some changes in this area."

New cost structures could only improve matters because uneconomical use of water was going to have an effect on decisions by industrialists, householders and farmers.

"Consumers must pay at least enough for water to cover the operating costs of State water schemes." The cost of developing water resources was continuing to rise and water was becoming more expensive.

Returning to the problem in the RWB area, Mr Hayward said another way of saving water

would be rationing. "But, with the Durban situation in mind, it would be a very sorry day indeed and I can only hope it will not come to that."

The present statutes of the RWB precluded the introduction of differential tariffs and penalties for water abuse.

"This is an anomalous situation that the board has recognised and I understand it has recently resolved to request parliamentary approval for an amendment to its statutes so it can adopt a tariff pricing policy designed to enforce the desired reduction in the consumption of water," said Mr Hayward.

There were ways to save on water. Industrialists could consider moving away from the traditional economic hubs of

the country to prevent strain on already overstretched supplies and more efficient irrigation methods could be used.

"Irrigation methods in too many cases have not kept pace with technological development — especially when compared with other countries with similar shortages of water."

Mr Dale Hobbs, chairman of the RWB, said available water supplies were so small that the application of measures designed to save water must be given the highest priority.

But the task of enforcing water restrictions was being hampered by shortages of maintenance staff and supervisors.

GOVERNMENT WILL NOT INCREASE CASH FLOW FOR WATER PROJECTS

Johannesburg THE STAR in English 6 May 83 p 4

[Text]

Government will not significantly boost the cash flow for water engineering projects yet, despite claims from influential experts that short-sightedness may have worsened the effects of the present drought.

This was confirmed to The Star by Mr Sarel Hayward, Minister of Environment Affairs and Fisheries. However, he did say negotiations for a massive water engineering project involving Lesotho were nearly complete.

Mr Hayward said a substantial increase in the budget for the Directorate of Water Affairs — part of the Department of Environment Affairs and Fisheries — could come only after the country's economy picked up. "You can't get blood out of a stone," he said.

Mr Hayward admitted a substantial budget increase for the Directorate of Water Affairs was a priority. The situation was reviewed constantly, he said.

The Minister's comments come after claims that more dams, canals, irrigation schemes and pipelines could have been built within an elaborate national water network had it not been for severe Government cash squeezes.

A former Secretary of the Department of Water Affairs, Dr Jacques Kriel, wrote last year: "If a severe drought occurs during the next 10 years, seri-

ous water shortages may be encountered because of the backlog in water projects resulting from the limitation in expenditure."

He wrote: "It seems obvious the Government had not been spending enough on water projects."

The 1970 Commission of Inquiry into Water Matters estimated the total capital expenditure on water schemes from 1970 to the year 2000 should amount to R3 300 million, of which the Department of Water Affairs would have to spend about R6 300 million — an average of R210 million a year.

But, because of inflation, that reflected an increase from R6 300 million to R17 325 million by 1980.

By 1980 the annual budget for the department should have been R800 million, says Dr Kriel, but it was R210 million.

On negotiations with neighbouring countries concerning joint water projects, Mr Hayward said talks were being held with Lesotho.

Negotiations on the Lesotho Highlands Project, a massive scheme to bring water from the mountains of the neighbouring state, were almost finalised.

"A decision should be taken within two weeks on whether to go ahead with a feasibility study," said Mr Hayward.

The Minister would not comment on the likelihood of power cuts throughout the country.

JOINT WATER PROJECTS IN SOUTHERN AFRICA ADVOCATED

Johannesburg THE STAR in English 6 May 83 p 12

[Article by Stephen McQuillan: "Water: The Key"]

[Text]

A unique economic swap between South Africa and its neighbours could put the sub-continent on the road to prosperity and ensure a sound future, according to an influential report.

The report says every state in southern Africa stands to benefit enormously by co-operating in joint water projects in a bid to meet snow-balling regional demand for water, energy and food production.

The report, which was circulated to Government leaders, was prepared by Dr Philip van der Riet, formerly attached to the Hydrological Research Unit at the University of the Witwatersrand.

The projects, which would present a "tremendous challenge" to statesmen now because of political differences, were essential for the future benefit of all states.

"Hopefully this challenge will be taken up, for in it lies the key to a prosperous long-term future for all the nations in southern Africa," says the report, entitled Co-operative Water Resources Development in Southern Africa.

The report outlines how financially attractive co-operation in water and power development could be.

It says a priority for developing nations of southern Africa was to raise food production and to gain self-sufficiency.

Water development was the key.

"The major ingredients for successful farming — capital, good soils, low-cost water and energy supplies and good management — can best be assembled by regional co-operation in water resources development," says the report.

Developing countries would obtain cash for agricultural development and be assured of low-cost water and energy supplies in return for giving South Africa water and hydro-energy on a large scale.

Farm management skills in South Africa, developed for southern African conditions, would become more readily available to developing nations as an extension of the joint projects.

"In southern Africa there are already numerous examples of beneficial interstate co-operation," says Dr van der Riet's report. "Among these are the customs union, shared use of railways and harbours and electrical energy trade."

"However, the path to totally unrestricted economic co-operation is being blocked in some cases where ideological differences and racial disharmony appear to over-ride basic economic considerations."

It was necessary to be politically optimistic because nonco-operation would inevitably lead to regional disaster in the long-term.

Nearly all the major rivers of southern Africa were international

and co-operation would become as imperative, economically, to southern Africa as the sharing of rail and harbour systems was today.

Co-operation would involve international water transfers, the sharing of water supplies and international hydro-energy transfers.

The most lucrative area for joint water projects was the Pretoria-Witwatersrand-Vereeniging-Sasolburg (PWVS) complex. By supplying water to this area from as far north as the Zambezi River, enormous benefits could be realised by participating states, including Lesotho, Kwazulu, Botswana and Namibia.

Food production on irrigated land would not keep pace with demands after the end of the century unless there was a major expansion in irrigation in the Vaal and Limpopo river basins.

More irrigation would only be possible if water imported to meet demand in the PWVS complex was not re-cycled, but made available for irrigation after being used in industry and the home.

Angola, Zambia and Mozambique had considerable agricultural potential which, if developed, would be of great benefit to the sub-continent.

Tropical Africa had the land to become self-sufficient and probably a

breadbasket of the world.

"In greater southern Africa — more than in any other region of the world — there exists the opportunity to blend the technological skills of the developed world with the agricultural resources of the undeveloping world to produce such a granary," says the report.

Money should be poured into joint water and electricity engineering projects instead of being given as aid, to eventually enable developing countries to help themselves, instead of relying on others.

In the report's preface Professor Desmond Midgley, former director of the university research unit and one of South Africa's leading authorities on water supply, said he had been advocating co-operation with neighbouring states for the development of water and power supplies for 20 years.

"It was my opinion that for too long South Africa's neighbour states had been trading in manual labour and it was high time they thought about trading in something far more lucrative, namely water and electricity," said Professor Midgley.

Contents of the report, submitted in 1980, take on a new importance as the crippling drought intensifies in southern Africa.

MINES PREPARE FOR DROUGHT EMERGENCY

Capetown THE CAPE TIMES in English 2 May 83 p 9

[Article by Brendan Ryan]

[Text]

JOHANNESBURG. — Measures taken by Escom to tailor generating capacity to water supplies, could have major effects on the collieries which supply the power stations with coal.

Export and Escom-tied coal mines are also presently evaluating the effects on their operations of possible Escom power cuts caused by the drought.

In addition they are examining the water situation and possible effects on the supplies needed for coal crushing and washing plants if the drought worsens.

Rand Mines coal division has already acted. The washing plant at Witbank Colliery's Albion section has been closed down and coal mined from the section will be treated through the new washing plant at Van Dyk's drift.

Rationalized

According to, Mr Roy MacGillivray, the deputy chairman of Rand Mines' coal division, operations throughout the group will be rationalized where possible to save power and water.

"We are preparing for power cuts and looking to see where we could reduce electricity consumption if faced with power rationing," he said.

The company's major revenue earner is Duvha colliery which supplies Escom's Duvha power station. The station is building up to full generating capacity of 3 600 MW by 1984.

"We don't think Duvha will be affected as the Duvha power station is more water efficient than many others and Escom should keep it going."

Mr J C Fritz, head of Gencor's mining operations said the group was concerned about the effects of possible power cuts and was assessing where power reductions could best be absorbed on the mines.

Power stations

"A major factor affecting the collieries could be decisions taken by Escom regarding which power stations could have their operations limited by lack of water," he said.

According to Escom spokesman Mr Etienne

du Plessis, any power rationing and output cuts from power stations must be done on a responsible basis to minimize the adverse effects on industry and the supplying collieries.

So far Escom has closed down two small stations, Ngagane and Umgeni, in Natal and reduced output by 60 percent from the Camden power station near Ermelo.

This has hit Trans-Natal's Usuthu colliery which supplies Camden and provided 3 900 000 tons of the 4 600 000 tons of coal burnt by the 1 600 MW capacity station in 1981.

Escom has also stepped up power generation from the older stations near the Vaal Dam which include the Vaal and Klip power stations.

Benefit

Extra demand for coal from these stations will be to the benefit of Amcoal's Cornelia colliery near Vereeniging which supplies them. It may also benefit Amcoal's Springfield colliery which supplies coal to

Escom and is situated north of the Vaal Dam.

Mr David Rankin, managing director of Amcoal, declined to comment on how the drought may affect Amcoal's collieries.

These are small stations as Vaal has a generating capacity of 297 MW and Klip 366 MW.

The benefits of extra coal consumption from them would be small compared to lower demand from a, for example 10 percent, cut at a major station such as Kriel which has a generating capacity of 3 000 MW and gets its coal from Amcoal.

Kriel power station and the two 3 000 MW stations currently closest to completion, Duvha (supplied by Witbank Colliery) and Matla (supplied by Trans-Natal), are all situated in the Eastern Transvaal where yet more of these stations are being built.

Other large stations currently generating in this area are Arnot, (2 100 MW) which is supplied by Amcoal and Hendrina (2 000 MW) which is supplied by Trans-Natal.

Dams

According to Minister of Mineral and Energy Affairs, Mr Pietie du Plessis, the Escom dams in the Eastern Transvaal will begin to run dry by August this year if there are no further rains.

However, the emergency scheme being undertaken on the Vaal River to pump water to the Grootdraai dam and the other measures being taken by Escom mean the Commission could generate at full power until March 1984, if there is no more rain before then.

The construction scheme on the Vaal is expected to take five months which is cutting it fine if power cuts are to be avoided from August.

Announcements by Escom on possible rationing of power and possible cutbacks at power stations are expected within a month.

If they take place the result will be lower demand for coal from the affected collieries which must affect the earnings of the parent mining companies.

DROUGHT HAMPERS FARM UNION, MAY FORCE EVACUATIONS

Cape Town THE CAPE TIMES in English 2 May 83 p 2

[Text]

THE Farmworkers' Union has temporarily frozen its negotiations for better service conditions until the end of the nationwide drought, and has called on the government to subsidize farmers who are struggling to pay their workers.

In a statement issued yesterday by the union's chairman, Mr Solly Easop, its executive committee said many farmers had actually gone into debt to pay their workers' wages and urgent steps were needed to keep labourers on farms or some country towns would become "like Crossroads".

The union has been engaged for years in seeking such benefits as a minimum wage and annual leave for farm workers, but at last week's meeting "it was decided that at this stage that the union would not press on with

negotiations for better service conditions, but resume at a later stage when the situation has improved".

"This decision was taken in the light of the devastating drought under which farmers virtually throughout the country are bowed."

"The union realizes that the farm-owner finds it a great burden to retain his workers, and therefore the union begs the central government to subsidize farmers immediately so that they will be in a position to pay their workers' wages."

'Appreciation'

"The union has great appreciation for farmers who have shown tenderness towards their workers by keeping them on the farm, caring for them and providing housing. Numerous such cases have come to the union's attention."

"The union feels this good attitude exhibited

by the farmer has promoted good race and labour relations".

Mr Easop said that as chairman of the union, he believed "this drought has brought the farmer and his workers closer to one another".

50 000

● About half-a-million blacks — 50 000 farm workers and their dependents — might be forced to evacuate farms because of the drought, reports our Pretoria correspondent.

This is the finding of a study by the National Maize Producers' Organization (Nampo) in the worst-affected drought areas.

Nampo's economist, Dr Kit le Clus, said there was just no work for the 50 000 farm labourers who had had to be retrenched because of the drought. Most of them, with their big families, would trek to the urban areas in search of work and housing.

SACC LAUNCHES DROUGHT RELIEF FUND

Johannesburg SOWETAN in English 9 May 83 p 2

[Article by Mono Badela]

[Text]

IN AN EFFORT to help combat widespread poverty and misery resulting from the worsening drought situation in South Africa, the South African Council of Churches has allocated R50 000 to help launch the Hunger and Drought Relief Fund.

This was announced by SACC general secretary, Bishop Desmond Tutu at a Press conference at the weekend.

Bishop Tutu blamed the plight of the countless victims of the drought-stricken South Africa on the Government's "unjust social dispensation".

Bishop Tutu said that many problems were caused by ideological motives: "People are being uprooted from their homes in the cities and dumped in the poverty-stricken homelands and so-called independent states." He said if South Africa was one nation, a more ready solution to the countless dying of starvation might be found.

He told the conference that the drought was depriving many

people of their livelihood and has revealed an inadequate supply and storage of water.

"This has caused acute hunger and health hazards being highlighted in continual outbreaks of cholera epidemic. The economic situation of our land at present is also creating an alarming and escalating unemployment rate."

He referred to the situation "as potentially dangerous". He said the real flash points were in the rural areas where the rate of unemployment was very high. "Men in future will not sit passively and watch their children die because of hunger. Men will kill for food and unless we do not ameliorate the situation we shall be embroiled in a

more serious situation. We have to handle the basic causes and much of the problem stems from the unjust social dispensation in South Africa."

Bishop Tutu said 25 representatives from member churches of the SACC and regional councils met last week to discuss the hunger and drought crisis in Southern Africa. He said it was decided that a campaign against hunger be launched which would include a project of food and work and an immediate relief programme. Churches were urged to make an all-out effort to ensure that water was available to all the communities; that all church workers help local development initiatives; that 1984 be declared as a Year of

Water; and that all Christian people positively work for the abatement of unemployment.

Bishop Tutu appealed to all churches of South Africa to support and co-operate in this programme financially, and to assist the SACC's interdepartmental committee in implementing the vast humanitarian programme.

He said the churches were not in competition with the Government, but were aware of the theological imperative to care for the weak and the hungry.

Churches had already started a concerted effort to provide food and water to all the communities in need, particularly those affected by the present drought in the land.

TAXPAYER WILL PICK UP DROUGHT BILL

Johannesburg THE STAR in English 10 May 83 p 7M

[Article by David Braun]

[Text]

The account for the drought must eventually be settled by the taxpayers, one way or another. This is the view of of Volkskas in its Economic Spotlight for May.

"Something that the city dweller does not often understand, is that a major drought impoverishes us all.

"Owing to the poor agricultural conditions farmers not only pay less tax, but the authorities must perforce allocate substantial amounts for relief to farmers."

The bank says the drought's most obvious effect is on the agricultural sector — barren fields, dying stock, agricultural production which declined by seven percent on average in 1982 (crop production naturally by much more), rising debts among farmers and an ever-growing number of farmers who are forced to quit.

CONSEQUENCE

Another consequence of the poor agricultural conditions will be that purchasing power of farmers will be considerably reduced this year.

"This means smaller sales by commerce and industry which, in turn, will lead to lower profits and fewer employment opportunities. Poor business conditions in turn will result in lower salary and wage adjustments."

Among the sectors likely to be hardest hit are rural general dealers, certain service industries and manufacturers of chemical products (fertilisers, insecticides), rubber and metal products and farm machinery.

Agriculture is also an important supplier of raw materials to several sectors of the economy, such as processors of food, leather, tobacco and liquor, as well as wool and cotton for the textile industry and timber for paper manufacturers.

"It would appear that the sectors which in total produce about 25 percent of manufacturing output are directly dependent on agriculture as supplier of primary raw materials."

Volkskas reports that there are indications that certain plants in the food processing sector are experiencing difficulties in acquiring agricultural products and there have already been reports of production losses and staff retrenchments as a result.

"In addition, one must remember that exports of certain agricultural products have had to be either suspended or curtailed and that maize will have to be imported.

"Inevitably, these developments will have a deleterious effect on South Africa's foreign trade account and they may

"slow down the improvement in the external value of the Rand."

What is of particular concern, says the bank, is that owing to water shortages in the coming months Escom may not be able to meet the demand for electricity at all times.

"Interruptions in the power supply to mining and manufacturing in particular, even if only for short periods, will affect production and this in turn will have a detrimental impact on the wealth of the nation."

And as if all this gloom and looming disaster was not enough, Volkskas is not optimistic about the effect of the drought on the inflation rate.

"About 25 percent of the average South African family's

spending is accounted for by food (whites about 20 percent and blacks in the region of 36 percent).

"A shortage of agricultural products will inevitably push up prices. Above-average increases in the price of foodstuffs will naturally impede all efforts to lower the inflation rate to acceptable levels.

"Moreover, the additional expenditure by Escom, industrialists and other businesses to ensure adequate power supplies will also increase costs."

Savings in water and power consumption will mean smaller profits if not losses for Escom, municipalities and water boards. This too will have to be recouped.

Volkskas sums up by saying the drought underscores the

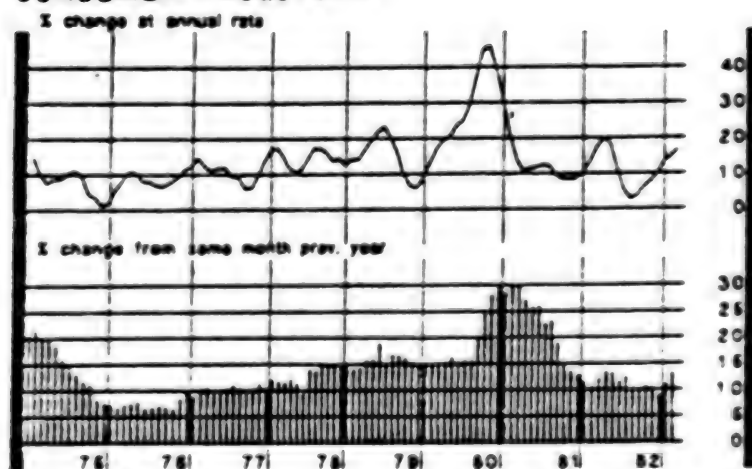
need to conserve water, curb the population growth and decentralise economic activity away from the PWV triangle.

The current water crisis will probably demand financial and other sacrifices to keep the economy buoyant and competitive with overseas countries.

A creative approach to solve the water supply problems and ensure the most efficient utilisation of this scarce resource is required.

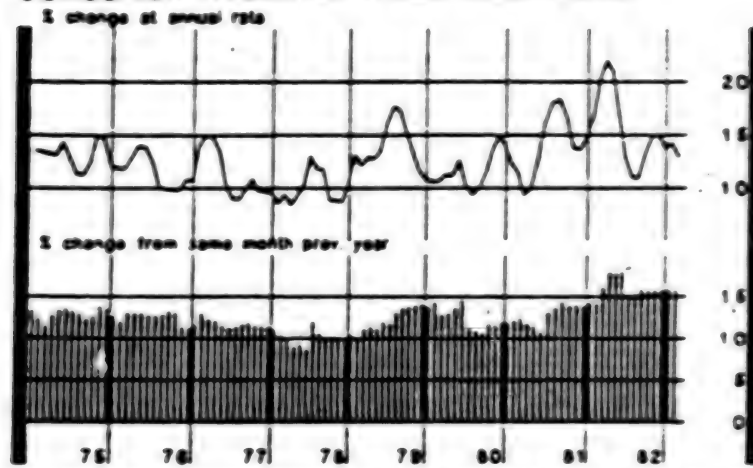
"There must also be acceptance of the fact that the drought will inevitably have a deleterious impact on the living standards of all and that short-term economic stunts to ward off the consequences are no solution at all."

CONSUMER PRICES FOOD



A comparison of these two charts, compiled by the Standard Bank, shows the divergent trends of consumer prices as measured for food

CONSUMER PRICES ALL ITEMS EXCL FOOD



and for all products excluding food. The effect of the drought is clearly shown on the food price trend.

CSO: 5000/188

QUEENSTOWN FARMERS BRACE FOR HARD WINTER

East London DAILY DISPATCH 9 May 83 p 7

[Text]

QUEENSTOWN — Tell a livestock farmer around here you are surprised that the worst drought in living memory hasn't yet brought him to ruin, and he will tell you, "Come see me after the winter."

The feeling in and around this busy town at the heart of a wide and normally rich stock farming region is that the crunch is going to come in July, or August.

For these farmers, whose situation is more or less typical of farmers throughout the Eastern Cape, winter will be make or break. And their pained tone of voice as they discuss their prospects would seem to indicate that while all are hoping for "make," many are bracing themselves for "break."

With grazing in most areas practically nonexistent, farmers have already cut heavily into their stores of winter fodder. The critical question now is whether their emptying fodder sheds can tide them over until the veld, with help from the rain they all

pray for, begins to grow again in the spring.

For months already, the famine on the veld has compelled farmers to rely heavily on purchases of feed concentrates and "imported" fodder from the Western Cape and other areas to keep their herds alive.

In a normal year, said Mr Corwyn Botha, the general manager of the East Cape Agricultural Co-operative here, the Co-op sold 1 000 tons of fodder. But in only the three months since February of this year, farmers have bought 5 000 tons from the Co-op, and they still don't have all they need. The gap between demand and supply is unbridgable.

"We have no hope of supplying fodder to everyone who needs it," Mr Botha said.

He said the Co-op had not been able to conclude any new contracts for the purchase of fodder because "fodder is not available now."

"We are actually importing lucerne pellets from the US — can you believe it?" he asked.

"It is general knowledge," Mr Botha said, "that fodder will not be available this winter."

"We haven't seen stock deaths around here yet, but once the fodder runs out it's going to be a different story."

And the farmer is pinched not only by the shortage of fodder, but also by the price — as high as R200 a ton, more than twice the normal cost.

Among stock farmers, beef rather than dairy producers are hardest hit when fodder becomes difficult or impossible to get. Dairymen can rely more heavily on feed, which, unlike fodder, is still generally available. But current supplies are meeting only half the demand, Mr Botha said, and prices, naturally, are high.

So, come mid or late winter, stock farmers, especially beef farmers, may well find themselves stuck with a lot of animals that they won't be able to feed. Shouldn't they sell them off now, and cut their losses before disaster strikes?

"Farmers would like to sell probably half their stock," said Mr Fred Pettit, the president of the East Cape Agricultural Union, headquartered here.

But market conditions, and the condition of the cattle, won't allow it.

It was impossible to get adequate quotas for slaughter stock from the controlled abattoirs, Mr Pettit said.

Meantime, sales at the private stockyards were "down 25 to 30 per cent — easily — in the last six months. There's very little market for breeding stock, young stock, or any stock not in slaughter condition. And what market there is offers only ridiculously low prices."

"We will get to the stage," said Mr Pettit, who raises 800 head of Merinos, and small herds of beef and dairy cattle on 1000 hectares near here, "where you won't be able to give an animal away."

With no choice but,

to hang on to their stock, farmers can only hope that the winter will be a kind one — even, ironically, a dry one, Mr Pettit explained.

"Normally, cattle should be fat in the autumn, but they are not because they have been without adequate grazing since the summer, and farmers can't afford now to feed them to get them fat."

"We're going into winter with cattle in poor condition. If we get cold weather combined with rain, it could kill them."

But even if the winter is a mild one, stock losses will still depend on the availability of fodder, and whether farmers can afford to buy it.

And farmers, Mr Pettit said, "are very quickly getting deep into debt."

One of the people farmers go to for help when money runs low is Mr Botha.

"Due to lack of income because of the drought, farmers are coming to the Co-op to

help them through the winter," he said.

Everyone who qualified for help would get it, Mr Botha said. But farmers who were genuinely in trouble because of the drought would have to be distinguished from farmers who might use the drought as an alibi for poor farm management.

The Co-op is feeling the economic effects of the drought in other ways as well.

"Farm business is dead. Sales of equipment have dropped off, and farmers are shelving any capital improvement projects," Mr Botha said.

One aspect of the Co-op's trade has picked up since the drought, though — but Mr Botha isn't especially pleased about it.

Animal medical products have been selling briskly, an indication, probably, of livestock weakened by bad conditions and vulnerable to illness.

And a portent, though everyone hopes not, of things getting worse before they get better. —
DDR

BRIEFS

DROUGHT AID FOR FARMERS--The drought aid measures announced recently by the Government would enable the greater portion of the country's "oppressed" farmers to remain on their farms and continue production, the president of the SA Agricultural Union, Mr Jaap Wilkens, said in a statement in Pretoria yesterday. "We are convinced that the measures offer a firm jumping-board to solve the financial distress of farmers in the short term," he said. He added that the executive committee and the co-operative council of the SAAU had decided at a meeting in Pretoria this week to continually monitor the functioning of the measures. "Due to the urgency of the matter, the president has been authorised to bring about co-ordination and to take any necessary action," the statement said. "Certain essential amendments were also pointed out at the meeting, which will be coordinated by the union and submitted to the Government on behalf of the farmers," it added. The SAAU would also again request that the interest rate on production loans be subsidised by three points, Mr Wilkens said.--Sapa [Text] [Johannesburg THE CITIZEN in English 12 May 83 p 5]

NATAL'S WATER CRISIS--Durban--There is now only enough water in the Midmar Dam and the Albert Falls Dam to supply Durban and Pietermaritzburg homes for about another 28 days. This picture of the seriousness of the situation facing residents in the two cities was given yesterday by Mr Fred Munro, engineer for the Water Board. He said that the levels in the two dams had dropped another 0,4 percent last week and, at present, both dams were only 14,1 percent full. He said that the present water rationing of 400 l for householders and flats might have to be tightened still further if the situation was to be saved. His board was working on schemes to provide other forms of water for Durban and Pietermaritzburg, but these would take time. The Durban City Engineer's office has had some peculiar applications for exemptions to the 400 l a day consumption limit. One man claimed he was seeking exemption because he had 51 people living under the same roof. Another Durban resident asked to be exempted like industry and commerce from all water restrictions because he worked from his home. A spokesman for the City Engineers Department said yesterday that some of the exemption requests would be laughable if the situation was not so serious. Residents were wasting the department's time by submitting foolish exemption requests. [Text] [Johannesburg THE CITIZEN in English 17 May 83 p 10]

Vaaldam-Zuikerbosch Canal--Water supply to the 17 000 sq km Rand Water Board (RWB) area will be more efficient after the opening of the R60 million Vaaldam-Zuikerbosch canal and pipeline system, which stretches for 30 km. The system features a concrete-lined canal, a dam, tunnels and a 8,5 km pipeline, with a capacity of 2 000 million litres day. Construction of the Vaaldam outlet works started at the end of 1979 and installation of the pipeline and building of the canal began in mid-1980. Remaining work on the project is expected to be completed before the end of this year. Engineers say a major advantage of the new system is that water will be fed directly from the dam to the pump station at Zuikerbosch and will not need to be raised from the Vaal Barrage. This will save about R5 000 a day in power costs. Zuikerbosch pumping station was commissioned in 1954 to increase the supply of drinking water to the RWB area. Initially, untreated water was pumped from the Vaal Barrage. In 1963, when it became necessary to increase the station's capacity, engineers decided it would be economical to tap untreated water using a gravity system from Vaaldam, so the original Vaaldam-Zuikerbosch pipeline was installed with a capacity of 800 million litres a day. Bigger pumps were then installed to boost capacity to 1 145 million litres a day. In 1975 engineers said that by 1980 the system would have to be boosted again. The RWB decided in 1977 that a new water supply system was needed. The board asked the Government to construct today's new complex. [Text] [Johannesburg THE STAR in English 6 May 83 p 2]

Tshipise Wasteland--Louis Trichardt--The entire area of Tshipise, about 90 km from Louis Trichardt, is a desert and all that can be seen in the thorny, arid wasteland that stretches to the Zimbabwean border are dead or dying trees, scrawny cattle and dry river beds. Even animals which have become hardened to droughts have succumbed and a game farmer from Tshipise said many of his sable and nyala antelope, impala and red hartebees had died from starvation and thirst. The lone oasis, where a good mealie crop was being watered by sprinklers, was Hayoma farm in Tshipise, owned by Mr Fanie Botha, the Minister of Manpower. The drought which is gripping the Southern African continent has spelt disaster for farmers who have lost their crops, herds and livelihood. The Government has made available money and loan arrangements in a bid to keep farmers on their lands. People in the city have not emerged from the drought unscathed. They are faced with water restrictions and higher food prices. But the worst aspect of the drought is that it has aggravated the shortage of food in the rural areas and thousands of blacks could die from disease this winter. [Text] [Johannesburg THE STAR in English 6 May 1983 p 4M]

Westerly Winds Caused Drought--Could a high incidence of westerly winds be responsible for the crippling drought in South Africa? A University of the Witwatersrand master's degree thesis by an Escom researcher, Israeli-born Mrs Osnath Miron, may hold the answer. She found that wind and pressure patterns could be associated with the amount of rain in South Africa in the past 20 years. She also found that wind direction on the surface, and at higher atmospheric levels, together with pressure systems, had a direct bearing on the amount of rain. In her nine-month study she looked at a dry period from 1963 to 1971, and a wet period from 1972 to 1980. She found that the wet period was marked by northerly and north-easterly winds and a high

incidence of low pressure systems. The dry period was marked by westerly wind and high pressure systems. Mrs Miron is reluctant to connect her findings with the present drought, but said this summer might have been marked by a frequent prevalence of high pressure systems. And she would not be surprised if it was also marked by a high incidence of westerly winds. Local scientists have long speculated on the relationship between rainfall, pressure fields and wind direction, but Mrs Miron is the first person to have studied the relationship between the different climatic conditions. She said her research could not be used for speculation on future climatic conditions, or as an explanation for the present drought. She saw it as a starting point to explain certain concepts not yet understood. [Text] [Johannesburg THE STAR in English 9 May 83 p 3M]

DAMARALAND KUDUS DIE--Windhoek--There are no kudus left in Damaraland according to the latest game census, as the worst drought in South West Africa this century continues to take its toll. The census was conducted by the Namibia Wildlife Trust, which carried out its last survey in July last year. The director of the Namibia Wildlife Trust, Mrs Ina Britz, said in the July survey 41 kudus were counted in Damaraland, north of the "red line." Today there are none. The number of giraffe in the area had dropped from 232 to 178 in the same period, while the number of elephant had dropped from 184 to 124.--Sapa [Text] [Johannesburg THE CITIZEN in English 17 May 83 p 15]

NATAL WATER CUTS--Durban--The present water restrictions in Natal were causing a loss of revenue of R50-million, Mr Fred Munro, the circle engineer of the Directorate of Water Affairs in Natal told delegates at a conference on water conservation in Durban yesterday. Speaking at the University of Durban-Westville, Mr Munro said South Africa could no longer afford the luxury of attracting industry by the lure of cheap water. Water had to be seen to cost the industrialist money and the re-use of effluent would have to be forced on industry, possibly by increasing the cost of water. Mr Munro said the country's water supplies were geared for the one-in-50 years drought situation. However, the authorities might have to consider increasing the water in store to cope with worse situations for the sake of those industrialists already saving water who could not pull in their belts much tighter under severe drought conditions.--Sapa [Text] [Text] Johannesburg THE CITIZEN in English 12 May 83 p 5]

FICKSBURG EXPORTS WATER--While much of South Africa is contending with severe water restrictions--and even rationing--the Free State town of Ficksburg has water to spare. It's the only town in the Free State that is exporting water--to Lesotho. The Ficksburg Town Council has just renewed a long-running contract to supply the Lesotho town of Maputsoe, which lies across the Caledon River, with water for another year. Maputsoe is developing into an industrial centre. The town clerk, Mr Frans Viljoen, says Ficksburg would also be able to supply water to surrounding towns, and even the goldfields, if its proposal to the Government to raise the level of the Meulspruit Dam was accepted.--Sapa. [Text] [Johannesburg THE CITIZEN in English 11 May 83 p 11]

NATION CONSIDERING ENVIRONMENT PROTECTION, POLLUTION CONTROL

Lusaka DAILY MAIL in English 23 Apr 83 p 5

[Excerpt] Zambia is considering introducing a comprehensive environmental protection and pollution control to enable her consolidate her efforts in the field of environmental management, Minister of Lands and Natural Resources, Mr Fitzpatrick Chuula has said.

However, Mr Chuula said in as much as Zambia wanted to develop appropriate technologies to minimise the disruption of the environment, her efforts were frustrated by lack of inadequate financial and technical resources.

Mr Chuula was speaking at a reception held in honour of the executive director of the United Nations Environmental Programme (UNEP), Dr Mustafa Tolba at the Hotel Inter-Continental.

He said Zambia was fortunate to be among very few countries in the world with an extensive system of national parks and forest reserves that comprised 20 per cent of the country's surface area.

"This is as a result of deliberate policy of the Party and its Government to set aside natural heritage reserves," he said.

He said it could be true that for a developing country like Zambia, concern for the environment is still regarded as being in conflict with the requirements of development because it was increasingly difficult to divert the country's meagre financial resources from other pressing developmental needs.

Mr Chuula said currently the country was being haunted with devastating droughts which have caused widespread famine and adversely affected the environment including wildlife.

Concurrently, there is inadequate water development schemes for irrigation and supply of clean water to rural populations.

He said soil erosion had caused deterioration in soil fertility thereby causing low crop yields adding that besides this the Department of lands was unable to control the situation because of inadequate manpower.

In reply, Dr Tolba appealed to the party and its Government to embark on seminars aimed at educating people on environment problems.

Dr Tolba said that Zambia had proved that it has the potential to solve most of its ecological development problems without much assistance.

Dr Tolba, who is based in Nairobi, Kenya, said UNEP had proposed to go out and teach people on ecological problems on seminar basis and Zambia was lucky in that it was endowed with a consultative mechanism in the party.

"I appeal to the party to go ahead and make the public aware of the nature of environmental problems we have now and not of the future because if they are not aware of this, they will not know their duties in preserving the environment," he said.

CSO: 5000/187

PLANS OF RSFSR OBLASTS TO PROTECT SMALL RIVERS OUTLINED

Moscow SOVETSKAYA ROSSIYA in Russian 9 Apr 83 p 1

[Article: "Along Life for Small Rivers"]

[Text] A year ago at a meeting of citizens of three rural soviets located at the juncture of Voronezh, Lipetsk and Tambov oblasts on whose territory the Bitug River flows, a remarkable initiative originated--to enlist the forces of the public to restore and improve these sources that feed the large rivers of Russia. The newspaper SOVETSKAYA ROSSIYA wrote about the decisions of the meeting at that time. It said: "Our conscience will no longer allow us to put up with the present condition of our beloved river, for which we are to blame. It is not simply a useful "water management facility" for us. Without this river we cannot imagine the land of our fathers, our homeland, all that is best that is held sacred in the hearts of the rural residents.

The good initiative was heartily supported by party and soviet agencies as well as public organizations, it encountered response from thousands of people and it was supported by concrete actions. The initiators themselves--residents of the Samovetskiy, Kaverinskiy and Shmarovski rural soviets--overfulfilled the commitments they adopted in the first year. First of all they cleared, put in order and restored to life the forgotten springs which are now pouring their water into the Bitug River. In the spring and autumn of last year more than 3,500 hectares of trees were planted on the banks of the rivers and other bodies of water and in the ravines and gullies of the three areas. For comparison let us say that if trees are planted in five rows the living belt of them can extend along both banks of a river such as the Don.

In Voronezh Oblast 13 complexes of cleaning installations and 14 water recycling systems have been put into operation. Discharges of unpurified water into the rivers have been reduced by 5.76 million cubic meters a year. In the lowlands of the rivers more than 1,600 hectares of protective forests have been planted and 331 of forest strips along river beds. Lipetsk workers last year reinforced 115 hectares of lowland and 20 sections of landslides. More than half of the summer camps for cattle located along the banks of rivers have been included in the protective zone. In Tambov Oblast 1,240 hectares of forest strips and ravine and gully plantings have been created along banks of rivers, ponds and water reservoirs. Nine ponds and hydrotechnical installations have been created. Last year for the first time in many years

the plan for the construction of water protection facilities at industrial bases was fulfilled and even overfulfilled.

In addition to the green protection along the banks of rivers and in the water catchment basins, in places where the soil has been extremely washed away hundreds of ponds and firths, banks of earth and dams, rock, network and brushwood embankments and other simple, but effective hydrotechnical, anti-erosion structures have been constructed.

Still we are well aware that this is only the beginning of a large project which will have to be carried out in order to maintain the purity and the water level of small rivers. For many thousands of kilometers their banks remain bare and the lowlands are plowed and trodden over by livestock. During the high water period, when there are hard rains, muddy water flows into the rivers from the ravines and gullies, they are increasingly silting up, and even without this their beds are becoming shallower. Unpurified water and wastes from animal husbandry farms are still being discharged into the bodies of water.

We think that in order to successfully continue the work that has been started, it is necessary first of all to get rid of the careless, short-sighted attitude towards small rivers that has arisen in many regions. Some people still think that now, when a nationwide struggle is underway for implementing the Food Program, is not the time to deal with the bodies of water, that there are more important issues. This is a profoundly erroneous point of view! To restore the health of small rivers and make them full of water and pure means also to restore the river bottom lands, to improve the water conditions of the surrounding fields and to prevent erosion of their productive layer. In a word, this is one of the most important tasks related to the fulfillment of the program.

This is why this spring it was decided to carry out the project that was started on a broader scale. A couple of days ago representatives of the communities of the three areas met in order to exchange their first experience and draw lessons from the mistakes that were made, but the main thing was to earmark a concrete plan of action for the future.

In order to carry out the tasks that have been set successfully, it is necessary to promptly begin preparation for spring planting, to determine ahead of time the sections that are to be forested, and to prepare plenty of planting material. This year all three of the areas have already stored up about 50 million seedlings. Last year's experience showed that just with work Saturdays or even 10-day work periods one cannot accomplish very much, and it is impossible to plant trees year around. It is necessary to take advantage as completely and efficiently as possible of the good spring and winter weather for planting. Taking this into account, the ispolkoms of the Voronezh, Lipetsk and Tambov oblast soviets of peoples' deputies adopted decisions to hold month-long work periods in the spring and winter to beautify small rivers, enlisting the broad public for this, so that by the end of the current five-year plan trees will have been planted on the banks of most of the small rivers.

We are glad that the first day of shock work of the spring month work period will be "Red Saturday"--the 16th of April. Everybody who is working in industry on that day will be relieved of his daily and other work and will go out to the banks of the small rivers, to the places where nature is awaiting our assistance. We will also be glad if this initiative becomes widespread in other oblasts of the Russian Federation. The small rivers of Russia are community property and they deserve everyone's concern.

Last year's experience teaches us that to plant a tree is only half of the matter, and that it is more difficult to protect it and make it grow. One must organize the tending of the planted areas promptly so that they do not become overgrown with weeds and are not trampled down by livestock. In this connection I will praise the initiative displayed last year by the Lipetsk Oblast Komsomol organization. A mass Komsomol youth Saturday was held during the summer to tend the young plantings, and it was decided that in the future every year on the second Saturday of July they would hold a Day of Small Rivers. I would like to believe that Komsomol organizations of other oblasts are following this good example. It is necessary to note, however, that they are very slow in establishing water protection zones of small rivers in which it is prohibited to plow the flood plains, to establish summer animal husbandry camps, to build warehouses for fertilizers and toxic chemicals, to equip parking areas, to wash vehicles, and so forth.

Having considered all these and other issues and having weighed their possibilities, we decided to make 1983 a shock year for improving the areas around small rivers.

In our oblast it is intended to carry out the following work throughout the course of the year:

In Voronezh Oblast, in the lowlands and water catchment areas, to plant 4,600 hectares of trees, and to create 2,500 hectares of planted areas in ravines and gullies, including 380 hectares along the banks of rivers. It is intended to construct 420 water retention embankments and 45 ponds.

In Lipetsk Oblast. To plant trees on 1,830 hectares of area in the basins of small rivers, including 344 hectares along the banks, to construct 34 dams, to clean 200 springs, and to reinforce 30 sections of river banks.

In Tambov Oblast. To plant more than 2,000 hectares of soil protection forest plantings in water catchment areas and also on 396 hectares along the banks of rivers and in ravines and gullies, and to construct 15 ponds and water reservoirs.

We are confident that the small rivers will return our labor with the splash of fish, vital freshness of the streams from springs, green coverings of abundant hay and, the main thing, increased fertility of the surrounding fields and meadows. We are convinced that everyone who values the nature of our beloved homeland will understand and support our cause.

On behalf of the participants in the meeting: from Voronezh Oblast: I. Likhodedov, chairman of the Tikhii Don Kolkhoz in Ostrogozhskiy Rayon, a member of the central council of the All-Russian Society for the Protection of Nature; F. Korizhko, director of the Zrtil'skaya forest amelioration station; A. Zabolotniy, secretary of the Komsomol obkom. From Lipetsk Oblast: I. Romantsev, head agronomist of the Krasnyy Oktyabr' Kolkhoz in Dobrinskoy Rayon, a member of the rural correspondent staff of the newspaper SOVETSKAYA ROSSIYA; G. Pavlov, chief of the division for small rivers of the oblast's administration for land reclamation and water management; G. Bobko, deputy chairman of oblast council of the All-Russian Society for the Protection of Nature. From Tambov Oblast: A. Minin, head of the oblast administration for land reclamation and water management; L. Alimova, chairman of the Shrarovskiy rural soviet of Mordovskiy Rayon; and M. Bulayeva, director of the station of young naturalists.

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BRIEFS

VOLCANO ERUPTS IN KAMCHATKA PENINSULA--Petropavlovsk-Kamchatskiy, 13 May TASS--TASS correspondent Mikhail Zhilin writes: The Klyuchevskaya Sopka volcano in the Kamchatka peninsula (northeast of the USSR) is erupting for the third month. The fiery river flowing down the volcano has cut through the many-metres-thick glacier and formed lava streams up to six kilometres in length. The speed of the lava streams is seven metres per second. The temperature of the lava at the source is over a thousand degrees centigrade. Ejection of ashes continues from the central crater of the mountain that stands 4850 metres above sea level. In the opinion of volcanologists the eruption does not pose a threat to the population. A field group of the Institute of Volcanology is keeping an eye on this awesome natural phenomenon. The scientists have set up their camp at the altitude of 1700 metres near one of the lava streams. Their life is made difficult both by the temperature emitted by the molten lava and the ashes that shower down on their tents. [Text] [LD131517 Moscow TASS in English 1414 GMT 13 May 83]

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ALAND ISLANDERS PROTEST DUMPING OF SWEDISH NUCLEAR WASTE

Helsinki HUFVUDSTADSBLADET in Swedish 4 May 83 p 20

[Article by Olle Ekstrom: "Alanders Appeal in Stockholm: 'No Nuclear Waste Under the Sea'"]

[Text] Stockholm--No to storage of nuclear fuel waste in bedrock under Oregrundsgrepen, and a new report on locating nuclear waste storage are demanded by a delegation of Aland Social Democrats and Swedish so-called People's Campaign Against Nuclear Power, who made a joint visit to Minister of Energy Birgitta Dahl on Tuesday.

Radioactive waste should not be stored in or under the water, but should be stored on land, demanded the delegates.

Even if the storage is placed 50 meters under the bottom of the sea, there are great risks of leakage, claimed the delegates.

The national nuclear power inspection (SKI) recently approved the suitability of building a storage for low and medium activity waste from Forsmark nuclear power plant in Forsmark on the northern Uppland coast and just opposite Aland. SKI said yes, but with a number of conditions and requirements for changes.

The government will now make the decision, and Minister Dahl said to the delegates, "We will make an independent judgment and take responsibility so that there will be a safe storage. Obviously we will respect the viewpoints of the citizens of Aland and the members of the people's campaign."

"The time is past when radioactivity can be released into the sea," said the chairman of the Social Democrats on Aland, Lasse Wiklof. "Nobody can guarantee that the storage will be safe under Oregrundsgrepen," he said.

Mrs Dahl did not want to anticipate the government's decision, but she referred to the statement of the SKI chief, Lars Nordstrom, that a storage on land is worse from a safety standpoint. On land there is the risk of cracks and the effects of ground water streams.

The delegates wanted the government to delay the decision until the international reports are ready in 1985. It is possible, however, that the government will quickly make a decision for reasons of employment. The storage will give nearly 300 jobs during construction, and 20-25 when in operation.

Forsmark is only half of the issue of storage of nuclear fuel waste for the citizens of Aland. On the other side of the sea the Finnish authorities are planning for storage of radioactive waste in Olkiluoto.

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CONCERN GROWING OVER PROTECTION OF FOREST RESOURCE

Helsinki HUFVUDSTADSBLADET in Swedish 4 May 83 p 3

[Article by Johan Ulfvens: "New View of Our Green Gold"]

[Text] "Our most important experience so far in forestry research is that we can not govern nature, only gently direct its development. We should try to adjust species to nature, which we can direct within the framework decided by nature. In this way we can get the greatest possible utilization from nature's free work." This statement is from Swiss Professor Hans Leibundgut, and it is cited in a new exercise book for this year published by the Finnish Society for the Protection of Nature and entitled "Tama vihreän kullen maa." Is a natural viewpoint going to form a standard for our forestry. Surely not right away, but the book is performing an urgent service if it brings new viewpoints into our cherished forestry debate.

One way to test the book for those who are interested in orienting themselves on this subject of conflict is to ask a number of impertinent questions and see what answers the exercise book gives. My questions deal mostly with environmental protection and forest protection methods.

Is the principle of persistent exploitation being carried out? What both the defenders of forestry and their critics say is that lumber extraction should not exceed the projected annual growth, meaning that the revenue should be raised, but do not use up the capital, instead try to increase the capital.

Surprisingly little is said in the exercise book about this basic principle in our forestry. For the protected forests and mountain forests in Lapland the issue is clear: Yrjö Norokorpi reminds us that the forest here lives at its outermost limit, and that it is necessary that we absolutely remain within the framework that nature prescribes, otherwise renewal is seriously

threatened and made more difficult or even impossible. In trying circumstances (this also applies to forests in the archipelago) special care is required so that man avoids creating large clear-cut areas and helps natural renewal in private forests.

Is Nature's Rhythm Disturbed?

But how is it in the rest of Finland? Have the recent decades of intensive forestry begun to undermine its very existence by such abrupt interruption of nature's own rhythm? Apparently all is well, because the forest areas, the amount of lumber, and growth of the industry have increased. But one gets to know little more than that from the exercise book, which does not answer the fateful question of whether we in the long term are upholding the forest's natural ability to renew itself or not.

How is the flora and fauna of the forest influenced? Several authors mention in passing the problem that today's forestry is impoverishing the flora and fauna, but separate articles on the subject do not agree. It is granted that we know all too little about the extent of impoverishment, especially when it comes to growth, insects, swamps and lower ground animals. In Sweden the quantitative picture is clearer, and we could at least have borrowed recommendations about how the care of flora and fauna could be managed in forestry.

The question also concerns the principle of endurance in a broader perspective. From the viewpoint of nature endurance is not utilized, as the number of endangered species is increased by the actions of man.

Is There Any More Native Forest?

How is it going with the native forest? It is natural to ask that question when the conflict between forestry and protection of nature also concerns the protection of specialized species which depend on the native forest. Esko Joutsamo notes that within our national parks and nature parks there are about 300,000 hectares of forest, which means that 1.5 percent of the growing forests are protected. This includes forest in protected nature areas on private land and virgin forest and cultivated forest which the Forest Administration manages. The situation is worst in southern and western Finland, where there is no virgin forest remaining, says Joutsamo.

Rolf Oinonen tells about the original virgin land, which includes undisturbed areas at a distance of at least 8 km from roadways. We have only 10 virgin areas remaining, and they are all in northernmost Lapland. But their edges are steadily being frayed, and Oinonen writes that "since conflicting needs are going to be sharpened in the future, and since the proper utilization of the virgin land is necessary to satisfy the needs of employment, environmental protection and recreation, there should be a national political and genuinely expert working group to deal with the question of the virgin areas."

The next logical question is whether such work could be expanded to include all the forests in the country, so that we would have an inventory of remaining virgin areas and a general protection program for natural forests, similar to the protection program for swamps, islands, streams, bird sanctuaries. It would be natural for the nature protection society to develop that thought in this book. Such a program would serve the interests of both forestry and protection of nature by preserving a part of the natural versatility of the forest and examination of the different forest species in different parts of the country.

Continuous Renewal

But let us continue with the questions about forest protection: can we refrain from cutting clear areas? Professor Matti Leikola says that the attitude toward cutting clear areas has varied greatly during the past century. Twenty years ago there were foresters who had a negative attitude toward cutting clear areas. But through the growth of the forest industry and through the entry of forest culture on the scene, the cutting of clear areas and replanting has become dominant. In northern and eastern Finland today they include 90-95 percent of the renewal areas. Cutting of clear areas has lately been reduced somewhat in favor of natural renewal.

A recommendation for an alternative to cutting clear areas has been advanced by Professor Erkki Lahde. It is he who quoted the Swiss professor's thoughts about natural forest protection, which mainly utilizes the forest's own dynamism, but as required tries to guide it in a direction which is compatible with economic needs. Lahde writes that "with thought given to sound development of forest protection and forest nature, a continued increase of widespread clear area cutting and cultivation is not the correct way to go." Lahde's recommendation is for continuous renewal within an area of different aged trees. Since such forest protection is often compared with thinning, the quality-reducing cutting which was common in the 30's and 40's, there is reason to quote Lahde's description:

"After cutting in accordance with the principle of continuous renewal, the forest does not become as it does after clear area cutting in long term under-production. One cuts the mature trees which have already stopped growing. Younger trees are left to grow further. In comparison with thinning from below or clear cutting one can in this way get more valuable lumber with fewer trees. At the same time growth can be directed to the fastest growing trees. As it is a matter of a varied forest structure which in the first place depends on different ages, it is unnecessary to fear that the continuous renewal would worsen the genetic quality of the stand. The continuous renewal can instead improve the hereditary durability qualities.

The question of whether we can reduce the amount of clear cutting depends on the judgment and technology that we apply. Lahde himself says that his

principle assumes a gentler technology than today (surely also more knowledge and more labor-intensive methods). Although that principle today is seen as utopian, there is reason carefully to investigate its advantages and disadvantages; at least it seems to be consistent with the principle of endurance. Those who work in the forest can clearly note that it is put fully into practice where personal activity is still practiced.

Multiple Use for Millions

What is the value of multiple use? It is too bad that the book does not have a comprehensive article about the multiple use principle. There are voices being raised which say that it should be made into a statutory foundation for forestry. In any case the reader gets a certain picture of the different dimensions of multiple use in the chapter which deals with how the forest is valued, natural feeding, berries and mushrooms, and city trees.

In the article about the forests in the national economy by Olli Saastamoinen one finds still the most solid information on the value of multiple use: tourism brings in annually 3,000 million marks (a large part can be assigned to the account of the forests and other natural features), berries and mushrooms 250 million, hunting 250 million and reindeer breeding 40 million marks. It is therefore no small sums which other products than lumber bring in, and the effect on employment is great.

Are Berries and Mushrooms Decreasing?

Are berries and mushrooms increasing or decreasing in today's forests? The answer to that question is important when one argues for different methods of forest feeding. Pentti Sepponen is forced to admit that our knowledge so far is imperfect. In every case it is clear that access to cloudberry and cranberry is adversely affected by forest ditching. The question of how other measures such as ground preparation, fertilizing and fighting insects affects the harvest in the long term needs more research, said Sepponen.

How much forest damage is caused by insects, fungus, elk, acid rain? There are many aspects of this question: It is said that insect damage gives losses which are as great as the increase in value created by fertilizing, or that fungus and insect damage are a larger problem than environmental protection. Forester Jorma Jantunen says that forestry itself creates the greatest forest damage. "The greatest production investment would be changed attitudes and more professional knowledge," he said.

Do planted trees produce inferior lumber? Research results showing that sown and planted forests produce inferior lumber to natural forest are often met with the assertion that deficient quality primarily arises on

fertile soil. To that the researchers reply that the knotty and warped pines exist in both lean and fertile soil. Here the exercise book leaves one in the lurch, the existence of the problem is only mentioned in passing.

Who Decides?

Finally two questions with social implications: who decides in the forest, the forest owner or the officials? With reference to different opinion studies in this book, Minister of Forestry Affairs Antti Malmberg says that the forest owners are satisfied with the existing practice and believe that they have sufficient freedom to decide on cutting methods. On the other hand there are studies which show that one-fourth of the owners believe that the alternatives limit them to a single formula, clear area cutting.

Forester Lauri Vaara clarifies the issue in a long contribution. He says that the power of the officials has gone so far that "the forest owner's almost only remaining influence is to refrain from selling lumber. That is getting to be more common."

According to Vaara the cause is that the forestry industry has infiltrated the decision-making process within private forestry so that, with the help of the price weapon and machinery development, cutting is going more to the purchase of standing timber and clear area cutting. Organizations of private owners interpret, supervise and enforce the law--they present recommendations for legislative requirements, and the forest owner has a hard time learning where the boundary goes (a forest in underproduction does not need according to the law to be renewed with clear cutting, but in practice it is). Vaara speaks of a "young cuckoo which has been nourished on the farm and pushed out of the community nest."

Closed Circle

Vaara says that the Forest Administration is a closed circle where an inner pressure increases the need to sharpen the requirements of the law, where forest owners have few possibilities to protect their rights, where criticism is silenced and professional knowledge is one-sided, where those on the outside have a hard time getting a glimpse of the drawbacks, and strong interest groups try to maintain the status quo.

Is that so? Vaara's proof is very penetrating, and if he is correct, the "waterworks management syndrome" has also infected Forest Administration.

Why is it so difficult for the alternative to break through? Vaara says that the reason is that a counterforce which should come from the forest owners is lacking. The influence from the industry and the administration is too strong to allow such a force to arise. In the last article of the book the same thing is discussed, but in more theoretical terms. Philosopher

Timo Tuomivaara says that forestry in Finland conducts a program of activity based on the idea that the forestry sector should operate like the national economy.

The Most Important Manifesto

Such a program of activity must be justified now and then when circumstances, knowledge and valuations change. It is possible that circumstances (for example, growth of a pulp industry in the tropics) and valuation (for example, the environmental movement) have changed so much that an adjustment is already necessary for that reason. But the program will sooner find itself in the situation of discussing whether knowledge (for example, profitability of the hard methods) has changed so much that an adjustment is necessary. It is not yet considered that a change is necessary--therefore the alternative is still facing an adverse wind.

Tuomivaara says in any case (I do not know if it is a direct compliment to the forest industry) that in a world where technological programs are affected by complicated and unforeseeable influences such programs are conducted best which do not postpone adjustments too long.

As my little test of questions shows, "Tama vihrean kullan maa" has several shortcomings, but also useful articles. With a little investigative journalism and lighter editing it could have been of more current interest and responsive. Despite everything, one can expect that it is the most important forest manifesto for environmental protection for this year. Its "unpredictable influences" must have an effect on forestry activities.

Kirsi Elo (Editor) 1983: Tama vihrean kullan maa. Suomen Luonnonsuojelun Tuki Oy. 42.50 marks. 128 pages.

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